

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: E-525 DOUBLE-SHELL TANK (DST) TRANSFER SYSTEM  
MODIFICATIONS PROJECT**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Excavation Restriction		Abatement controls as required in the following Conditions and Limitations.
	Fixatives (paint, water, dust suppressants)		Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

05/27/2003 NOC received April 30, 2003. Draft Conditions and Limitations, AIR 03-802, mailed on August 4, 2003. Draft Conditions and Limitations accepted on August 4, 2003. Final Approval, AIR 03-804, mailed on August 6, 2003.

02/19/2004 NOC Revision received February 19, 2004 and approved via AIR 04-213 on February 26, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 6.50E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 6.50E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Performing the following modifications to bring select portions of the DST system into conformance with regulatory, safety, and contractual requirements.

The modifications shall be accomplished by performing the following activities:

#### **241-AZ-151 CATCH TANK BYPASS**

A new RCRA-compliant condensate distribution system for condensate from an existing DST ventilation system shall be installed. The condensate distribution system shall include a new fabricated tank system (i.e., secondary containment enclosure, tank, piping, pumps and controls) and new condensate distribution lines routed back to the ventilation return lines on each of the aging waste tanks (i.e., 241-AZ-101, 241-AZ-102, 241-AY-101, and 241-AY-102).

The newly fabricated tank system will be located outside the northeast corner of building 241-AZ-702. Most of the secondary containment structure will be located below grade (except for the cover that will be located above grade) to provide operator access.

The lower level of the fabricated tank system shall contain the receiver tank for the condensate coming from the AZ-PC-SP-1 seal pot via line AZ-503. Other components housed in the lower level shall include the sump, sump suction line, tank suction piping, tank return piping, tank vent lines, instrument access risers, leak detection, and freeze protection, as required.

The upper level of the fabricated tank system will contain the distribution piping, pumps, valves, instrumentation, and controls. Operator access shall be provided as required (e.g., access ladder, hatch or door on system cover, mid-level grating to support operator). Distribution valves shall be located to provide the ability to use remote valve actuators if required. Freeze protection for the piping, pumps, and valves shall be used as required.

The AZ-PC-SP-1 seal pot is located in the 241-AZ-702 Building and this seal pot serves as a collection point for condensate originating from the 241-AZ-702 ventilation system. The 241-AZ-702 ventilation system provides primary tank ventilation for the 241-AY and 241-AZ DSTs. The existing 241-AZ-151 catch tank would be isolated in a separate effort to support other commitments.

Currently there are two drain paths into the 241-AZ-151 catch tank that will remain active after June 30, 2005. Those two drain paths are the condensate from the 241-AZ-702 Facility and the 241-AZ-801A floor drain. The 241-AZ-702 condensate drain line shall be rerouted to the 241-AY tanks and also to the 241-AZ tanks. In addition, the 241-AZ-801A floor drain shall be isolated.

#### **241-AN AND 241-AW CLEAN OUT BOX TRANSFER LINE MODIFICATIONS**

Sixteen Clean Out Boxes (COBs) have been identified on transfer lines. These COBs shall have access ports cut into the non-contaminated 12 inch vertical stand pipe, the primary pipes and encasements shall be cut and caps welded in place; and the upper portion of the structure cut off, isolated, and disposed in accordance with ALARACT 15, "Demonstration for Size Reduction of Waste Equipment for Disposal" and ALARACT 4, "Demonstration for Packaging and Transportation of Waste". This modification will

entail approximately 100 one-inch pipe cuts, 20 two-inch pipe cuts, and 10 three-inch pipe cuts. The primary transfer lines and encasement pipes shall be capped on the branch section and welded to the COB structure.

The COBs must either be modified to be regulatory compliant or deactivated/isolated and removed.

The AN and AW Farms COB design consists of a 24-inch diameter steel cylinder formed from a 1/4 inch thick rolled steel plate and mounted on a 12-inch vertical stand pipe. The vertical stand pipe extends about four feet below grade to the slurry transfer line. A concrete anchor block supports the COB, encasement, and transfer pipe.

The sixteen COBs to be deactivated and/or isolated by the E-525 Project are:

AN Farm:

COB-AN-7, COB-AN-8, COB-AN-9

AW Farm:

COB-AW-1, COB-AW-2, COB-AW-3, COB-AW-4, COB-AW-5, COB-AW-6, COB-AW-7, COB-AW-8, COB-AW-9, COB-AW-10, COB-AW-11, COB-AW-12

242-A Evaporator

COB-A-30

#### SY TRANSFER LINE MODIFICATIONS

The following transfer lines, SL-177, SN-277, SN-285, SL-180, SN-280, and SN-286 shall be removed, cut into sections, and disposed of in accordance with ALARACT 15 "TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal", and ALARACT 4, "TWRS ALARACT Demonstration For Packaging and Transportation of Waste". Pit walls shall be core drilled as needed to accommodate the new pipe-in-pipe RCRA compliant configuration.

Pipe trenches shall be excavated to remove and install the new transfer lines. Excavation shall be accomplished with the guzzler and hand digging.

#### 204-AR TRANSFER LINE MODIFICATION

Waste transfer line LIQW-702 shall be modified to extend the transfer line encasement through the pit wall. This pipe is buried approximately three and a half feet below grade, so the excavated area shall be approximately 10' x 10' x 6'. Demolition of a portion of the slab under an old laundry facility and a section of the asphalt surface adjacent to the doorstep of the facility will be required for access.

The new encasement section shall be open-ended, upstream of the exterior wall seal plate. The obsolete air purge connection to the existing encasement shall be removed.

#### 4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	1.41E-07	Am - 241	1.82E-01	Am - 243	1.72E-06
Ba - 137	m 4.27E+01	C - 14	1.64E-04	Cd - 113	m 5.09E-03
Cm - 242	3.50E-03	Cm - 243	6.62E-06	Cm - 244	1.11E-04

Co - 60	2.52E-03	Cs - 134	1.30E-04	Cs 137	4.53E+01
Eu - 152	2.36E-04	Eu - 154	1.02E-02	Eu - 155	1.20E-02
H - 3	1.07E-02	I - 129	3.05E-05	Nb 93 m	9.15E-04
Ni - 59	5.45E-05	Ni - 63	5.30E-03	Np - 237	1.03E-03
Pa - 231	3.45E-07	Pu - 238	2.98E-04	Pu - 239	4.23E-03
Pu - 240	9.67E-04	Pu 241	1.93E-02	Pu - 242	1.13E-07
Ra - 226	1.27E-08	Ra 228	6.84E-06	Ru - 106	4.32E-09
Sb - 125	2.36E-03	Se - 79	1.23E-04	Sm - 151	9.39E-01
Sn - 126	1.70E-04	Sr - 90	1.43E+01	Tc 99	3.49E-02
Th - 229	2.02E-07	Th - 232	9.02E-07	U 232	2.18E-05
U - 233	8.95E-05	U - 234	8.06E-05	U - 235	3.11E-06
U - 236	5.81E-06	U - 238	5.92E-05	Y - 90	6.33E+00
Zr - 93	9.61E-04				

- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in

the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3), or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5), (WAC 246-247-080(5)).

- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) The Annual Possession Quantity shall be tracked on a WDOH approved log.
- 23) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).

- 24) All pit work shall be performed in accordance with ALARACT 6 "TWRS ALARACT Demonstration for Pit Access", ALARACT 13 "TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment", and ALARACT 14 "TWRS ALARACT Demonstration for Pit Work".
- 25) All soil excavation, not using the Guzzler, shall be conducted in accordance with ALARACT 5 "TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools)".
- 26) Required cuts of contaminated piping shall be made inside a glove bag. To perform pipe cuts of contaminated piping without a glove bag piping shall be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 dpm/100 square centimeters beta/gamma and 200 dpm/100 square centimeters alpha.
- 27) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-040(9)).
- 28) Guzzler excavation shall be performed in accordance with the latest approved revision of the WDOH approved Guzzler NOC (NOC ID 328).
- 29) When performing work inside a glove bag and using a PTRAEU (NOC ID 411) or HEPA filtered vacuum (NOC ID 410) all conditions and limitations of site wide approvals for operation of the PTRAEU and HEPA filtered vacuums shall be followed.

DEPARTMENT OF HEALTH  
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**PROJECT TITLE: E-525 DOUBLE-SHELL TANK (DST) TRANSFER SYSTEM  
MODIFICATIONS PROJECT**

Emission Unit Name: 241-AZ-301

Emission Unit ID 751

This is a MINOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential-EDE.	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

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Performing the following modifications to bring select portions of the DST system into conformance with regulatory, safety, and contractual requirements.

The modifications shall be accomplished by performing the following activities:

#### 241-AZ-151 CATCH TANK BYPASS

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The newly fabricated tank system will be located outside the northeast corner of building 241-AZ-702. Most of the secondary containment structure will be located below grade (except for the cover that will be located above grade) to provide operator access.

The lower level of the fabricated tank system shall contain the receiver tank for the condensate coming from the AZ-PC-SP-1 seal pot via line AZ-503. Other components housed in the lower level shall include the sump, sump suction line, tank suction piping, tank return piping, tank vent lines, instrument access risers, leak detection, and freeze protection, as required.

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#### 241-AN AND 241-AW CLEAN OUT BOX TRANSFER LINE MODIFICATIONS

Sixteen Clean Out Boxes (COBs) have been identified on transfer lines. These COBs shall have access ports cut into the non-contaminated 12 inch vertical stand pipe, the primary pipes and encasements shall be cut and caps welded in place; and the upper portion of the structure cut off, isolated, and disposed in accordance with A1.A.R.A.C.T 15, "Demonstration for Size Reduction of Waste Equipment for Disposal" and A1.A.R.A.C.T 4, "Demonstration for Packaging and Transportation of Waste". This modification will entail approximately 100 one-inch pipe cuts, 20 two-inch pipe cuts, and 10 three-inch pipe cuts. The primary transfer lines and encasement pipes shall be capped on the branch section and welded to the COB structure.



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The sixteen COBs to be deactivated and/or isolated by the E-525 Project are:

AN Farm:

COB-AN-7, COB-AN-8, COB-AN-9

AW Farm:

COB-AW-1, COB-AW-2, COB-AW-3, COB-AW-4, COB-AW-5, COB-AW-6, COB-AW-7, COB-AW-8, COB-AW-9, COB-AW-10, COB-AW-11, COB-AW-12

242-A Evaporator

COB-A-30

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Pipe trenches shall be excavated to remove and install the new transfer lines. Excavation shall be accomplished with the guzzler and hand digging.

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H - 3	1.07E-02	I - 129	3.05E-05	Nb - 93	m 9.15E-04

Ni - 59	5.45E-05	Ni - 63	5.30E-03	Np - 237	1.03E-03
Pa - 231	3.45E-07	Pu - 238	2.98E-04	Pu - 239	4.23E-03
Pu - 240	9.67E-04	Pu - 241	1.93E-02	Pu - 242	1.13E-07
Ra - 226	1.27E-08	Ra - 228	6.84E-06	Ru - 106	4.32E-09
Sb - 125	2.36E-03	Se - 79	1.23E-04	Sm - 151	9.39E-01
Sn - 126	1.70E-04	Sr - 90	1.43E+01	Tc - 99	3.49E-02
Th - 229	2.02E-07	Th - 232	9.02E-07	U - 232	2.18E-05
U - 233	8.95E-05	U - 234	8.06E-05	U - 235	3.11E-06
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- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
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- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3), or ALARACT (paragraph 4), whichever is applicable,

or any limitation included in this approval (paragraph 5), (WAC 246-247-080(5)).

- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
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- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 23) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with

the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-040(9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR  
**PROJECT TITLE: TANK FARM RESTORATION AND SAFE STORAGE**

**Emission Unit Name: TYPE-1, TYPE-2, TYPE-3****Emission Unit ID 447**

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	HEPA	1	Type-1
	HEPA	1	Type-2 and Type-3
	Charcoal filter	1	Type-2 and Type-3

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075(3)	Appendix B, Method 114	GROSS ALPHA/BETA	Annual, unless specified by the NOC.

**Sampling Requirements:** One of the following methods may be chosen for actual emissions reporting: nondestructive assay, record sampler, or continuous air monitoring, whichever is more appropriate.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/17/2002 Revised NOC was approved via AIR 02-1227 on December 31, 2002 and supercedes and obsoletes NOC ID 435.

09/08/2003 NOC Revision received August 29, 2003 to revise the location and proposed action of the transfer line work that occurs within the 219-S Waste Handling Facility. Conditions and Limitations, AIR 03-1001, mailed on October 8, 2003. Acceptance of Conditions and Limitations received via fax on October 8, 2003. Corrected letter, AIR 03-1101, mailed on November 04, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

## EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil ( $>100,000$  dpm/100 cm<sup>2</sup> beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

## PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."

The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

#### PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, handsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physics technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	8.93E-04	Co - 60	1.06E-03	Cs - 137	7.11E+00
Eu - 152	1.95E-02	Eu - 154	3.32E-02	Pu - 238	6.98E-04
Pu - 239	6.39E-03	Pu - 240	2.31E-03	Pu - 241	5.08E-02
Pu - 242	6.90E-08	Sr - 90	3.97E+01	U - 233	1.46E+00
Y - 90	3.96E+02				

- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to

- observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting, requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter.



- The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) When Portable Temporary Radioactive Air Emission Units are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for Portable Temporary Radioactive Air Emission Units (DOE/RL-96-75).
- 23) The Radiological Containment Selection, Design & Specifications Guide, RPP-7933, Revision 0 shall be used. Changes made to RPP-7933, Revision 0 shall be provided to WDOH. The Department retains the right to change or add approval conditions and limitations based on the changes to RPP-7933.
- 24) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be tracked on a WDOH approved log.
- 25) To determine the potential-to-emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.
- 26) When HEPA vacuums are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for HEPA Vacuums.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: TANK FARM RESTORATION AND SAFE STORAGE**

**Emission Unit Name: GUZZLER**

**Emission Unit ID 476**

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: **ALARACT**

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Collection Tank and Plate Separator	1	
	Cyclone Separator	1	Baghouse with 72 bags each.
	Micro-strainer Device	1	
	HEPA	3	Three in-place tested HEPA filters in parallel.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075[3]	Appendix D, Method 114(3)	All radionuclides which could contribute greater than 10% of the potential-to-emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25% of the TEDE to the MEI, after controls.	When the HEPA filters are replaced and annually screening the HEPA filtration system.

**Sampling Requirements:** Radiation surveys and to include but not limited to NDA testing of the HEPA filters and screening the HEPA filtration system using gamma spectroscopy.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/17/2002 Revised NOC was approved via AIR 02-1227 on December 31, 2002 and supercedes and obsoletes NOC ID 435.

09/08/2003 NOC Revision received August 29, 2003 to revise the location and proposed action of the transfer line work that occurs within the 219-S Waste Handling Facility. Conditions and Limitations, AIR 03-1001, mailed on October 8, 2003. Acceptance of Conditions and Limitations received via fax on October 8, 2003. Corrected letter, AIR 03-1101, mailed on November 04, 2003.

## CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to  $1.38\text{E-}02$  mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to  $1.38\text{E-}02$  mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

### EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil ( $>100,000$  dpm/100 cm<sup>2</sup> beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

### PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."

The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

#### PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, bandsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physics technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

**4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am -241	1.58E-01	Sr 90	7.87E+00
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- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance

-- (WAC 246-247-060-(2)(d)).

- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting, requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)).

.. (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) All guzzler operations shall meet the requirements of latest approved Site-Wide Categorical Notice of Construction or Tank Farm A Complex Notice of Construction.
- 23) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be tracked on a WDOH approved log. The total APQ and Potential to Emit to the MEI for the Guzzler and hand excavation of soil shall not exceed the total APQ and Potential-to-Emit values.
- 24) To determine the potential-to-emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: TANK FARM RESTORATION AND SAFE STORAGE**

**Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE**

**Emission Unit ID 486**

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/17/2002 Revised NOC was approved via AIR 02-1227 on December 31, 2002 and supersedes and obsoletes NOC ID 435.

09/08/2003 NOC Revision received August 29, 2003 to revise the location and proposed action of the transfer line work that occurs within the 219-S Waste Handling Facility. Conditions and Limitations, AIR 03-1001, mailed on October 8, 2003. Acceptance of Conditions and Limitations received via fax on October 8, 2003. Corrected letter, AIR 03-1101, mailed on November 04, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

## EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil (>100,000 dpm/100 cm<sup>2</sup> beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

## PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."



The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

#### PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, bandsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physic technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

**4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.59E-01	Co - 60	1.06E-03	Cs - 137	7.11E+00
Eu - 152	1.95E-02	Eu - 154	3.32E-02	Pu - 238	6.98E-04
Pu - 239	6.39E-03	Pu - 240	2.31E-03	Pu - 241	5.08E-02
Pu - 242	6.90E-08	Sr - 90	4.75E+01	U - 233	1.46E+00
Y - 90	3.96E+01				

- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to

- observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting, requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter.

- The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) To determine the Potential-to-Emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.
- 23) The Radiological Containment Selection, Design & Specifications Guide, RPP-7933, Revision 0 shall be used. Changes made to RPP-7933, Revision 0 shall be provided to WDOH. The Department retains the right to change or add approval conditions and limitations based on the changes to RPP-7933.
- 24) The Annual Possession Quantity and the Potential-to-Emit to the MEI shall be tracked on a WDOH approved log.
- 25) When HEPA vacuums are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for HEPA Vacuums.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE LIQUID EFFLUENT RETENTION FACILITY AND  
THE 200 AREA EFFLUENT TREATMENT FACILITY**

Emission Unit Name: LERF BASIN #44

Emission Unit ID 146

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Charcoal filter	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	The near field monitors called out under condition 22 must operate continuously and the samples will be collected every two weeks consistent the the provisions of condition 22.

Sampling Requirements: Environment SamplingAdditional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

- 12/26/2002 New Notice of Construction (LERF/ETF NOC Application, Revision 1, received December 3, 2002 that obsoleted multiple NOC IDs. Approved via AIR 02-1257 dated December 31, 2002.
- 09/12/2003 Conditions and Limitations, AIR 03-1219, mailed on December 31, 2003 to reflect current appeal language agreed upon on September 12, 2003. Corrected copy, AIR 04-101, mailed on January 5, 2004 to correct enclosure from APQ to Release Rates.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is  $8.48\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	4.45E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
B/G - 0	2.95E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C 14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			



U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	C -14	Ce 144
Cm -244	Co -60	Cs -134
Cs -137	Eu -154	Eu 155
H -3	I -129	K -40
Mn 54	Na -22	Nb -94
Np -237	Pu -238	Pu 239/240
Pu -241	Ra -226	Ru 106
Sb 125	Se -79	Sr -90
Tc -99	U -233	U 234
U 235	U -236	U -238
Zn -65	Zr -95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.
- 6) **This condition was obsoleted on 9/12/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

- 7) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040-(5) and WAC 246-247-060-(5)).
- 8) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 9) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 10) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 11) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 12) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 13) The Department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 14) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 15) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 16) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 17) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 18) The licensee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the



- monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met: In the case of permanent shutdown of the emission unit: (i) the licensee completes the monitoring and associated recordkeeping for that period prior to the shutdown. (ii) the licensee files a report of closure with the Department of Health in accordance with WAC 246-247-080(6). An emission unit will not be considered to be permanently shut down or completed until a report of closure is received by the Department of Health (WAC 246-247-080(6)).
- 19) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
  - 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
  - 21) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
  - 22) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
  - 23) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to  $4.59\text{E-}02$  mrem/year unabated and abated.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE LIQUID EFFLUENT RETENTION FACILITY AND  
THE 200 AREA EFFLUENT TREATMENT FACILITY**

Emission Unit Name: LERF BASIN #43

Emission Unit ID 147

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Charcoal filter	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	The near field monitors called out under condition 22 must operate continuously and the samples will be collected every two weeks consistent the the provisions of condition 22.

Sampling Requirements: Environment Sampling

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

- 12/26/2002 New Notice of Construction (LERF/ETF NOC Application, Revision 1, received December 3, 2002 that obsoleted multiple NOC IDs. Approved via AIR 02-1257 dated December 31, 2002.
- 09/12/2003 Conditions and Limitations, AIR 03-1219, mailed on December 31, 2003 to reflect current appeal language agreed upon on September 12, 2003. Corrected copy. AIR 04-101, mailed on January 5, 2004 to correct enclosure from APQ to Release Rates.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $8.48E-02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	4.45E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
B/G - 0	2.95E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C - 14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			



U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144
Cm - 244	Co - 60	Cs - 134
Cs - 137	Eu - 154	Eu - 155
H - 3	I - 129	K - 40
Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240
Pu - 241	Ra - 226	Ru - 106
Sb - 125	Sc - 79	Sr - 90
Tc - 99	U - 233	U - 234
U - 235	U - 236	U - 238
Zn - 65	Zr - 95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.
- 6) **This condition was obsoleted on 9/12/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

- 7) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040-(5) and WAC 246-247-060-(5)).
- 8) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 9) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 10) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 11) The facility must be able to demonstrate workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 12) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 13) The Department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 14) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 15) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 16) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 17) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 18) The licensee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the

monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met: In the case of permanent shutdown of the emission unit: (i) the licensee completes the monitoring and associated recordkeeping for that period prior to the shutdown. (ii) the licensee files a report of closure with the Department of Health in accordance with WAC 246-247-080(6). An emission unit will not be considered to be permanently shut down or completed until a report of closure is received by the Department of Health (WAC 246-247-080(6)).

- 19) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 22) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 23) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to  $4.59\text{E-}02$  mrem/year unabated and abated.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE LIQUID EFFLUENT RETENTION FACILITY AND  
THE 200 AREA EFFLUENT TREATMENT FACILITY**

Emission Unit Name: LERF BASIN #42

Emission Unit ID 148

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Charcoal filter	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	The near field monitors called out under condition 22 must operate continuously and the samples will be collected every two weeks consistent the the provisions of condition 22.

Sampling Requirements: Environment Sampling

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/26/2002 New Notice of Construction (LERF/ETF NOC Application, Revision 1, received December 3, 2002 that obsoleted multiple NOC IDs. Approved via AIR 02-1257 dated December 31, 2002.

09/12/2003 Conditions and Limitations. AIR 03-1219, mailed on December 31, 2003 to reflect current appeal language agreed upon on September 12, 2003. Corrected copy. AIR 04-101, mailed on January 5, 2004 to correct enclosure from APQ to Release Rates.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.



The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is  $8.48\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha-0	4.45E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
B/G - 0	2.95E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C - 14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se 79	Liquid/Particulate Solid	
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	C -14	Ce -144
Cm -244	Co -60	Cs -134
Cs -137	Eu -154	Eu -155
H -3	I -129	K -40
Mn -54	Na -22	Nb -94
Np -237	Pu -238	Pu -239/240
Pu -241	Ra -226	Ru -106
Sb -125	Se -79	Sr -90
Tc -99	U -233	U -234
U -235	U -236	U -238
Zn -65	Zr -95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.
- 6) **This condition was obsoleted on 9/12/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

- 7) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040-(5) and WAC 246-247-060-(5)).
- 8) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 9) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 10) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 11) The facility must be able to demonstrate workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 12) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 13) The Department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 14) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 15) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 16) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 17) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 18) The licensee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the

monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met: In the case of permanent shutdown of the emission unit: (i) the licensee completes the monitoring and associated recordkeeping for that period prior to the shutdown. (ii) the licensee files a report of closure with the Department of Health in accordance with WAC 246-247-080(6). An emission unit will not be considered to be permanently shut down or completed until a report of closure is received by the Department of Health (WAC 246-247-080(6)).

- 19) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 22) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 23) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to  $4.59\text{E-}02$  mrem/year unabated and abated.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE LIQUID EFFLUENT RETENTION FACILITY AND  
THE 200 AREA EFFLUENT TREATMENT FACILITY**

Emission Unit Name: 296-E-1

Emission Unit ID 301

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
Vessel Off-Gas System	HEPA	3	1 heater and 2 filters in series, with 2 parallel fans (minimum of 1 in operations). VOG discharges into Building Ventilation
Vessel Off-Gas System	Fan	1	
Building Ventilation System	HEPA	2	3 parallel flowpaths each with 1 filter and 1 fan; minimum 2 in operation.
Building Ventilation System	Fan	2	Serves both areas

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	The sampling requirement is to take 4 one week duration samples each year (utilizing the stack record sampling equipment).

Sampling Requirements: Monitoring stations N498, N499, N972, and N999

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/26/2002 New Notice of Construction (LERF/ETF NOC Application, Revision 1, received December 3, 2002 that obsoleted multiple NOC IDs. Approved via AIR 02-1257 dated December 31, 2002.

09/12/2003 Conditions and Limitations, AIR 03-1219, mailed on December 31, 2003 to reflect current appeal language agreed upon on September 12, 2003. Corrected copy, AIR 04-101, mailed on January 5, 2004 to correct enclosure from APQ to Release Rates.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).

- 2) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha-0	4.25E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. ETF release rates are based on ETF operating capacity + 5 million gallon storage capacity (54.3 million gallons/yr plus 5.0 million gallons = 59.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
B/G - 0	2.82E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/gamma release rate is assumed to be Sr-90/Cs-137. ETF release rates are based on ETF operating capacity + 5 million gallon storage capacity (54.3 million gallons/yr plus 5.0 million gallons = 59.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C - 14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			





U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	C -14	Ce 144
Cm -244	Co -60	Cs 134
Cs -137	Eu -154	Eu 155
H -3	I -129	K -40
Mn -54	Na -22	Nb -94
Np -237	Pu -238	Pu -239/240
Pu -241	Ra -226	Ru -106
Sb -125	Se -79	Sr 90
Tc -99	U -233	U 234
U -235	U -236	U -238
Zn -65	Zr -95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

5) The following activities are approved for the 296-E-1 Emission Unit Point-Source Emissions:

- ETF operations and maintenance.
- Containerized wastewater additions to the ETF process.
- Leaks into the ETF secondary containment.
- Secondary waste packaging and storage.

- 6) **This condition was obsoleted on 9/12/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

*Condition/Limitation added via AIR 02-1257. Obsoleted by appeal language agreed upon on September 12, 2003.*

- 7) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040-(5) and WAC 246-247-060-(5)).
- 8) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 9) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 10) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 11) The facility must be able to demonstrate workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 12) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 13) The Department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 14) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 15) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II (WAC 246-247-080(2)).
- 16) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 17) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).

- 18) The licensee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met: In the case of permanent shutdown of the emission unit: (i) the licensee completes the monitoring and associated recordkeeping for that period prior to the shutdown. (ii) the licensee files a report of closure with the Department of Health in accordance with WAC 246-247-080(6). An emission unit will not be considered to be permanently shut down or completed until a report of closure is received by the Department of Health (WAC 246-247-080(6)).
- 19) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 22) The emissions for this activity from the 296-E-1 stack are limited to 3.89E-02 mrem/year unabated and 1.95E-05 mrem/year abated.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE LIQUID EFFLUENT RETENTION FACILITY AND  
THE 200 AREA EFFLUENT TREATMENT FACILITY**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

12/26/2002 New Notice of Construction (LERF/ETF NOC Application, Revision 1, received December 3, 2002 that obsoleted multiple NOC IDs. Approved via AIR 02-1257 dated December 31, 2002.

09/12/2003 Conditions and Limitations, AIR 03-1219, mailed on December 31, 2003 to reflect current appeal language agreed upon on September 12, 2003. Corrected copy, AIR 04-101, mailed on January 5, 2004 to correct enclosure from APQ to Release Rates.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility

(LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $8.48\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha-0	3.83E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate is based on the maximum PTE for the load-in station. (diffuse/fugitive) is based on ETF operating capacity (54.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Beta -0	2.54E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta release rate is assumed to be Sr-90/Cs-137. The release rate is based on the maximum PTE for the load-in station. (diffuse/fugitive) is based on ETF operating capacity (54.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C -14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm -244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co -60		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs -134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu -154		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu -155		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			



Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	C - 14	Ce - 144
Cm 244	Co -60	Cs - 134
Cs -137	Eu - 154	Eu - 155
H 3	I -129	K -40
Mn 54	Na - 22	Nb 94
Np -237	Pu -238	Pu -239/240
Pu -241	Ra -226	Ru -106
Sb 125	Se - 79	Sr -90
Tc -99	U - 233	U -234
U -235	U -236	U -238
Zn -65	Zr -95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

5) The 200 Area Diffuse/Fugitive Emission Unit at LERF/ETF is limited to the following:

- LERF wastewater receipt via pipeline and LERF access ports.
- Minor leaks during transfers when using vented pipelines.
- LERF operations and maintenance.
- LERF leachate collection system sampling and sump pumping.
- Load-in station wastewater receipts via container.
- Load-in station filter skid operation and maintenance.
- Load-in station tank operation, maintenance, and repair.
- Wastewater tanker inspection, pressure testing, and repair.
- Minor leaks and spills to secondary containment systems.
- Storage and transfer of treated effluent containing tritium.
- Effluent sampling.
- Purgewater open-top settling tank operation.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-

247-030(16), may be conducted.

The load-in station consists of two load-in tanks, a sump, transfer pumps, a skid-mounted filtration system, level instrumentation for tanker trucks, underground transfer lines that allow transfers to either the LERF or the ETF, and leak detection capabilities for the containment basin and transfer lines. Containerized wastewaters received at the load-in station are typically routed through the filter skid. When solids buildup causes differential pressure across a filter housing to become excessive, the filter elements are replaced. The filtration system is shut down, the system is vented to atmosphere by opening a quick release vent cap on top of each filter housing, and solution in the housing is drained to the load-in station sump. The housing is then opened and the spent filter elements are placed in a disposal container. After filter change-out, the sump is emptied to the load-in station, the LERF, or the ETF. The capability to filter sump discharges is also provided at the load-in station. Small shipments that cannot be pumped directly into the filter skid are first drained into the sump, then pumped through the filter skid using the sump pump.

Wastewater tanker inspection, pressure testing, and repair are also conducted at the load-in station as needed to meet annual U.S. Department of Transportation certification requirements. Tankers, which may contain a wastewater heel, are pressurized with compressed air, leak checked at 80 percent of service pressure, and integrity tested at 150 percent of service pressure. After the test is complete, the compressed air is gradually vented from the tanker to the atmosphere. Minor repairs (e.g., seal replacement) are performed as needed to successfully complete the certification test. Hydrostatic testing is inherently safer and is preferred over pneumatic testing because it minimizes the volume of pressurized vapor space. When hydrostatic testing is performed, the tanker is filled with verification water or other clean water before pressurizing the tanker. At the conclusion of the test, the used water is treated as a new wastewater.

- 7) **This condition was obsoleted on 9/12/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).  
*Condition/Limitation added via ATR 02-1257. Obsoleted by appeal language agreed upon on September 12, 2003.*
- 8) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040-(5) and WAC 246-247-060-(5)).
- 9) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 10) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 11) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).



- 12) The facility must be able to demonstrate workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 13) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 14) The Department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 15) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 16) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 17) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 18) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 19) The licensee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met: In the case of permanent shutdown of the emission unit: (i) the licensee completes the monitoring and associated recordkeeping for that period prior to the shutdown. (ii) the licensee files a report of closure with the Department of Health in accordance with WAC 246-247-080(6). An emission unit will not be considered to be permanently shut down or completed until a report of closure is received by the Department of Health (WAC 246-247-080(6)).
- 20) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 21) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for

inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).

- 22) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 23) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 24) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to  $4.59\text{E-}02$  mrem/year unabated and abated.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: DECONTAMINATION FOR TRANSITION OF THE 241-Z LIQUID WASTE  
TREATMENT FACILITY TO DEMOLITION**

Emission Unit Name: 296-Z-3

Emission Unit ID 386

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Demister	1	For Tank Vent Only
	Heater	1	
	Prefilter	1	2 parallel paths minimum of one path in operation.
	HEPA	2	2 parallel paths with 2 HEPAs in series, minimum of 1 path in operation. Credit given for one HEPA only.
	Fan	1	2 parallel paths with minimum of 1 path in operation

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93[b](4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	All radionuclides that contribute greater than 10 percent of the potential-to- emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25 percent of the TEDE to the MEI after controls	Continuous

**Sampling Requirements:** Record SampleAdditional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

09/15/2003 New NOC, DOE/RL-2002-72, Revision 0, received December 19, 2002. Revision, DOE/RL-2002-72, Revision 1, received June 2, 2003. Revision, DOE/RL-2002-72, Revision 2, received August 18, 2003. Draft License conditions issued November 17, 2003 via AIR 03-1108.

11/21/2003 Acceptance of Draft Conditions and Limitations received via fax on November 20, 2003. USDOE letter number 04-AMCP-0077. DOH approval letter, AIR 03-1109, mailed on November 21, 2003.

## CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to  $7.80E-03$  mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The approved activity is to transition the 241-Z Building for dismantlement. All work shall be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological manual. These requirements shall be carried out through the activity work packages and associated radiological work permits.

The waste tank system is approved to continue to receive liquid waste from the 234-5Z Building, waste will continue to be sampled in the 241-ZA Sampling Building, and chemical treatment of the waste and transfer to Tank Farms concurrent with clean out activities are allowed to continue. In preparation for the proposed transition activities, housekeeping, bag out of contaminated waste from the sample glovebox, assays, routine and preventive maintenance, and minor decontamination will occur as part of continued operations.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $8.70E+00$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am	241	3.30E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu	- 238		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Pu	- 239	2.00E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu	- 240	4.80E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu	- 241	9.50E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu	- 242		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				

The radioactive isotopes identified for this emission unit are (no quantities specified):

Pu -238	Pu -239	Pu -240
Pu -241	Pu -242	Am -241

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESIAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEL, or greater than 25% of the TEDE to the MEL after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The approved activity is to transition the 241-Z Building. The transition activities will include the following:

**Decontamination** - Personnel entries will be made into the below-grade tank cells to decontaminate the area external to the tanks. Debris will be removed from the cells and disposed as solid waste. Debris will be size reduced as necessary using physical disassembly and or cutting as necessary to facilitate disposal of the waste. Both direct contact and remote technologies/techniques decontamination methods in use throughout industry and the DOE Complex today could be used. A water wash down may be performed in the cells with existing sumps used to transfer the liquid waste to TK-D4 for eventual transfer to Tank Farms. A fogging agent, wetting and/or fixative agents will be applied as a fixative for loose contamination. This decontamination will facilitate later cell work and samples will be taken to support a RCRA closure plan and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 activities. This activity sampling may involve chipping or boring portions of the concrete surface or painted surfaces of the belowgrade cell. Additional entries will be made into the belowgrade tank cells to remove sludge and to decontaminate the tank interiors to facilitate later size reduction activities. The planning basis uses a high pressure multi-nozzle wash system to decontaminate the tank interiors but other approaches such as low pressure nozzles, chemical agents, agitators or pumps may be used to facilitate suspension or removal of the sludge material from the tanks. Closed loop liquid re-circulation with filtration may also be used to collect residual contamination. Reconfiguring the piping system to facilitate continued use of the facility concurrent with cleanout may occur. This reconfiguration may include breaking of existing piping and tubing to facilitate the installation of pumps, valves and other equipment within the 296-Z-3 ventilated area (i.e., below-grade cells or sample glovebox).

If radiological contamination is detected in locations in the 241-Z Building or 241-ZA Sampling Building not serviced by the 241-Z cell exhaust system, or in the 241-ZB Bulk Chemical Storage or 241-ZG Building, spot decontamination and/or stabilization shall be conducted. Such activities could result in fugitive and diffuse emissions. Removal of contamination may also use washing with decontamination agents and/or physical removal of part of the surface by mechanical means.

**Deactivation** - Deactivation will remove some active systems from service to support process equipment removal and decontamination activities. Deactivation will apply to the following systems:

electrical, steam, criticality monitoring, and sanitary water. In addition, drain lines that currently route to the 241-Z Building from the PFP Complex will be isolated physically in the 234-5Z Building. In the 241-Z Building, after decontamination activities are completed, spool pieces will be removed from the two lines that can be used to transfer waste from TK-D5 to 244-TX. This will isolate the 241-Z Building from Tank Farms. This activity can include cutting of pipe or breaking flanges of the existing piping system. The ventilation system will be physically isolated (blanked off) from the 241-ZB Bulk Product tank D-9.

**Equipment Removal From Belowgrade Cells** - Removal of contaminated equipment will occur as part of the decontamination of the system components and the remediation of contaminated surfaces where needed. This equipment could include items such as ladders, grating, piping, pumps and agitators associated with the tanks that might have to be removed or replaced to facilitate decontamination of the tanks. Equipment will be size reduced, as necessary, using physical disassembly and or cutting as necessary to facilitate packaging as waste. Additionally, sections of piping could be cut and capped to facilitate removal of holdup material. Existing ventilation systems will be used to the extent possible to control air flow during the activities, supplemented by temporary containment required to be constructed to access the belowgrade cells. It is anticipated that a good portion of the waste generated by these activities will be classified as transuranic (TRU) waste and will be packaged in drums or solid waste boxes and disposed accordingly. Operations such as housekeeping preparation for cell entry and storing of wrapped stabilized contaminated items in unscaled containers as well as packaging operations such as opening the shipping containers, adding filler material, inspecting and installing final container closure in preparation for shipment may occur within a plastic containment enclosure set up above the cell entry. This space will routinely be ventilated by either the 296-Z-3 stack by providing ventilation communication to belowgrade cell via a cell access opening or by using a portable temporary radioactive air emissions unit (PTRAEU) after a physical barrier is in place between the containment and the belowgrade cell.

**Equipment Removal** - Equipment removal activities will remove non-contaminated equipment and other non-contaminated components to facilitate future dismantlement. This would include items in the 241-Z Building, as well as the support buildings (the 241-ZA Sample Building and the 241-ZG Building). Non-contaminated equipment that may be removed includes light fixture ballasts and fluorescent lamps, criticality detectors, or other nonessential items. Contaminated and potentially contaminated equipment external to the cells may include tanks (D-9, D-10 and D-11), piping, pumps, sample glovebox in 241-ZA, control panels and other equipment external.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use throughout industry and the DOE Complex today. Both direct contact and remote technologies/techniques could be used. These technologies would include chemical cleaning, brushing, washing, scrubbing, scabbling, vacuum cleaning, strippable coatings and similar technologies. Equipment and piping removal may include using wrenches, nibblers, shears, cutters and saws.

- 6) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

Process activities associated with the 296-Z-3 Stack

Routine operations include: receipt and transfer of liquid waste, manipulation of valves, accessing the belowgrade cells to perform repairs, conducting inspections and performing Non-Destructive Analysis, adding chemicals to the tanks, agitating waste in the tanks, flushing of tanks, sampling of liquid waste using the sample glovebox, bagging out samples and waste material from the glovebox, pumping of liquid waste using steam jet, electric and pneumatic pumps, repair of system equipment within the cells including agitators, pumps, valves, pipes and electrical equipment, fogging belowgrade cells for radiological control purposes, minor decontamination using low pressure wash down, wet wipe down and the use of fixatives. System ventilation control and monitoring equipment requires maintenance of the equipment, testing of HEPA filters, effluent flow rate measurements and replacement of ventilation system HEPA filters and monitoring related sample collection filters.

Access into the cells will be made through any existing opening to the cell including: manways, equipment access ports, cover block, piping penetrations and pipe ways

Removal of waste from the cells will be accomplished by: manual lifting or mechanically assisted lifting using cranes, hoists, jacks or similar lift devices.

Size reduction of equipment will be by mechanical means and could be accomplished by disassembly using of wrenches, nibblers, shears, cutters, grinders or saws. This equipment could be manually, hydraulically, pneumatically, or electrically powered.

Decontamination methods include: scraping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.

Containment of waste could be accomplished by a combination of coating the material with a fixative, placing the material in containers, bags and/or wrapping in plastic sheeting, using adhesive tape, heat sealing or mechanical closure to prevent release of airborne contamination.

Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installations of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and filters.

Welding of such things as lifting eyes, temporary supports, and repair of structural components could be performed on surfaces decontaminated to less than 20,000 dpm/100 cm<sup>2</sup>.

- 7) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 8) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this

chapter (WAC 246-247-080(1)).

- 9) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 10) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 12) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 13) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 14) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 15) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 16) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 17) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 18) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).



- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 21) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 22) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 23) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 24) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 25) The request for alternative monitoring using the existing ANSI N13.1, 1969 designed sampling systems is approved. The alternative monitoring shall use the existing sampling system operating in part-time super-isokinetic mode and to report releases based on the maximum design fan flow rate (3,000 CFM), rather than increasing the periodic measurements during periods of flow change. The existing sampling system is designed to sample a 2,500 CFM flow rate, operates in a super-isokinetic mode due to stack flow of ~600 CFM associated with reduced facility operation while one of the two fans operates. The alternate monitoring approval is given to report releases based on the maximum design fan flow rate (3,000 CFM) for both fans operating, regardless of actual system flow. The QA

requirements of 40 CFR part 61, Appendix B, method 114 shall apply to this major emission unit.

- 26) The following controls are approved as low as reasonably achievable control technology (ALARACT) for transition of the 241-Z Building.

Health physics technician (HPT) coverage will be provided, as necessary, during transition activities.

With the exception of periods when fogging operations are occurring, the existing ventilation system, exhausting through the 296-Z-3 Stack, will be operational during all transition activities.

Appropriate controls such as water, fixatives, covers, temporary containment tent, or windcreens will be applied if needed, as determined by the Health Physics organization as delineated in the site radiological control procedures.

Welding on contaminated surfaces will only occur if the affected area has been decontaminated to the extent practical. Welding on contaminated surfaces will not be conducted unless the effluent is exhausting through the 296-Z-3 Stack and contamination is below 20,000 dpm/100 cm<sup>2</sup> in the area to be welded.

As appropriate, before starting work on isolating utilities and piping, removable contamination in the affected area(s) might be reduced to ALARA. Measures such as expandable foam, strippable decontamination agents, fixatives, encapsulants or glovebags also could be used to help reduce contamination.

A temporary containment will be used at all times for radiological controls during access to the belowgrade cells.

When possible, ventilation for the containment will be provided by drawing air to the belowgrade cells and exhausted via the 296-Z-3 stack.

Any PTRAEU associated with the temporary containment will not be operated unless there is a physical barrier to minimize communication with a space ventilated by the 296-Z-3 stack.

Activities in the temporary containment being ventilated by the PTRAEU exhausters while wrapped and stabilized (unsealed) materials are present will be limited to those that have a low risk of disturbing the wrapped stabilized items. Such activities could include performing routine surveys inside the temporary containment, removing the stabilized sample glovebox and associated piping, inspecting the material, preparing to open the access to the belowgrade cells or performing final closure of the waste container. Decontamination of areas up to 20,000 dpm/100 cm<sup>2</sup> is allowed as long as airborne levels inside the temporary containment are not expected to exceed the administrative limit 4.5 E-10 uCi/ml on average for the period of operation. Handling of stabilized contaminated materials including size reducing is allowed as long as airborne levels within the temporary containment do not exceed 4.5 E-10 uCi/ml alpha contamination on average for the period of operation.

- 27) The abated emission limit for the 296-Z-3 emission unit is 4.3 E-3 mrem/year to the maximum public receptor.

28) It is recognized that isotopes of uranium are present in very limited quantities at this facility, but are not of significance.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: DECONTAMINATION FOR TRANSITION OF THE 241-Z LIQUID WASTE  
TREATMENT FACILITY TO DEMOLITION**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALABACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

09/15/2003 New NOC, DOE/RL-2002-72, Revision 0, received December 19, 2002. Revision, DOE/RL-2002-72, Revision 1, received June 2, 2003. Revision, DOE/RL-2002-72, Revision 2, received August 18, 2003. Draft License conditions issued November 17, 2003 via AIR 03-1108.

11/21/2003 Acceptance of Draft Conditions and Limitations received via fax on November 20, 2003. USDOE letter number 04-AMCP-0077. DOH approval letter, AIR 03-1109, mailed on November 21, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 7.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The approved activity is to transition the 241-Z Building for dismantlement. All work shall be

performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological manual. These requirements shall be carried out through the activity work packages and associated radiological work permits.

The waste tank system is approved to continue to receive liquid waste from the 234-5Z Building, waste will continue to be sampled in the 241-ZA Sampling Building, and chemical treatment of the waste and transfer to Tank Farms concurrent with clean out activities are allowed to continue. In preparation for the proposed transition activities, housekeeping, bag out of contaminated waste from the sample glovebox, assays, routine and preventive maintenance, and minor decontamination will occur as part of continued operations.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.70E-00 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	3.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239/24	2.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Pu - 241		Am - 241		Pu - 239/240	
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The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 6) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 7) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).

- 8) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 9) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 10) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 11) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 12) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 14) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 16) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 17) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).

- 18) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 19) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6)).
- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 23) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

#### PROCESS ACTIVITIES ASSOCIATED FUGITIVE EMISSIONS

The proposed activity will provide a potential for fugitive emissions beyond those associated with the PTRAEU activities above. The activities providing such a potential include:

Decontaminations of spot contamination up to 2,000 dpm/100 cm<sup>2</sup> in above grade unventilated areas

Securing the 296-Z-3 Stack exhaust for purposes of performing fogging using contamination fixatives

Handling of contaminated laundry, step-off pad waste and contaminated equipment with fixed contamination in unsealed containers

Bag-out operations associated with the sample glovebox.

- 24) The following controls are approved as low as reasonably achievable control technology (ALARACT) for transition of the 241-Z Building.

Health physics technician (HPT) coverage will be provided, as necessary, during transition activities.

With the exception of periods when fogging operations are occurring, the existing ventilation system, exhausting through the 296-Z-3 Stack, will be operational during all transition activities.

Appropriate controls such as water, fixatives, covers, temporary containment tent, or windscreens will be applied if needed, as determined by the Health Physics organization as delineated in the site radiological control procedures.

Welding on contaminated surfaces will only occur if the affected area has been decontaminated to the extent practical. Welding on contaminated surfaces will not be conducted unless the effluent is exhausting through the 296-Z-3 Stack and contamination is below 20,000 dpm/100 cm<sup>2</sup> in the area to be welded.

As appropriate, before starting work on isolating utilities and piping, removable contamination in the affected area(s) might be reduced to ALARA. Measures such as expandable foam, strippable decontamination agents, fixatives, encapsulants or glovebags also could be used to help reduce contamination.

A temporary containment will be used at all times for radiological controls during access to the belowgrade cells if the below grade area is posted as an airborne radiation area (airborne levels expected to be greater than 0.1 Derived Air Concentration (DAC)).

When possible, ventilation for the containment tent will be provided by drawing air to the belowgrade cells and exhausted via the 296-Z-3 stack.

- 25) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The approved activity is to transition the 241-Z Building. The transition activities will include the following.

Decontamination - Personnel entries will be made into the below-grade tank cells to decontaminate the area external to the tanks. Debris will be removed from the cells and disposed as solid waste. Debris will be size reduced as necessary using physical disassembly and or cutting as necessary to facilitate disposal of the waste. Both direct contact and remote technologies/techniques decontamination methods in use throughout industry and the DOE Complex today could be used. A water wash down may be performed in the cells with existing sumps used to transfer the liquid waste to TK-D4 for



eventual transfer to Tank Farms. A fogging agent, wetting and/or fixative agents will be applied as a fixative for loose contamination. This decontamination will facilitate later cell work and samples will be taken to support a RCRA closure plan and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 activities. This activity sampling may involve chipping or boring portions of the concrete surface or painted surfaces of the belowgrade cell. Additional entries will be made into the belowgrade tank cells to remove sludge and to decontaminate the tank interiors to facilitate later size reduction activities. The planning basis uses a high pressure multi-nozzle wash system to decontaminate the tank interiors but other approaches such as low pressure nozzles, chemical agents, agitators or pumps may be used to facilitate suspension or removal of the sludge material from the tanks. Closed loop liquid re-circulation with filtration may also be used to collect residual contamination. Reconfiguring the piping system to facilitate continued use of the facility concurrent with cleanout may occur. This reconfiguration may include breaking of existing piping and tubing to facilitate the installation of pumps, valves and other equipment within the 296-Z-3 ventilated area (i.e., below-grade cells or sample glovebox).

If radiological contamination is detected in locations in the 241-Z Building or 241-ZA Sampling Building not serviced by the 241-Z cell exhaust system, or in the 241-ZB Bulk Chemical Storage or 241-ZG Building, spot decontamination and/or stabilization shall be conducted. Such activities could result in fugitive and diffuse emissions. Removal of contamination may also use washing with decontamination agents and/or physical removal of part of the surface by mechanical means.

**Deactivation** - Deactivation will remove some active systems from service to support process equipment removal and decontamination activities. Deactivation will apply to the following systems: electrical, steam, criticality monitoring, and sanitary water. In addition, drain lines that currently route to the 241-Z Building from the PFP Complex will be isolated physically in the 234-5Z Building. In the 241-Z Building, after decontamination activities are completed, spool pieces will be removed from the two lines that can be used to transfer waste from TK-D5 to 244-TX. This will isolate the 241-Z Building from Tank Farms. This activity can include cutting of pipe or breaking flanges of the existing piping system. The ventilation system will be physically isolated (blanked off) from the 241-ZB Bulk Product tank D-9.

**Equipment Removal From Belowgrade Cells** - Removal of contaminated equipment will occur as part of the decontamination of the system components and the remediation of contaminated surfaces where needed. This equipment could include items such as ladders, grating, piping, pumps and agitators associated with the tanks that might have to be removed or replaced to facilitate decontamination of the tanks. Equipment will be size reduced, as necessary, using physical disassembly and or cutting as necessary to facilitate packaging as waste. Additionally, sections of piping could be cut and capped to facilitate removal of holdup material. Existing ventilation systems will be used to the extent possible to control air flow during the activities, supplemented by temporary containment required to be constructed to access the belowgrade cells. It is anticipated that a good portion of the waste generated by these activities will be classified as transuranic (TRU) waste and will be packaged in drums or solid waste boxes and disposed accordingly. Operations such as housekeeping preparation for cell entry and storing of wrapped stabilized contaminated items in unsealed containers as well as packaging operations such as opening the shipping containers, adding filler material, inspecting and installing final container closure in preparation for shipment may occur within a plastic containment enclosure set up above the cell entry. This space will routinely be ventilated by either the 296-Z-3 stack by providing ventilation communication to belowgrade cell via a cell access opening or by using a portable temporary radioactive air emissions unit (PTRAEU) after a physical barrier is in place.

between the containment and the belowgrade cell.

**Equipment Removal** - Equipment removal activities will remove non-contaminated equipment and other non-contaminated components to facilitate future dismantlement. This would include items in the 241-Z Building, as well as the support buildings (the 241-ZA Sample Building and the 241-ZG Building). Non-contaminated equipment that may be removed includes light fixture ballasts and fluorescent lamps, criticality detectors, or other nonessential items. Contaminated and potentially contaminated equipment external to the cells may include tanks (D-9, D-10 and D-11), piping, pumps, sample glovebox in 241-ZA, control panels and other equipment external.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use throughout industry and the DOE Complex today. Both direct contact and remote technologies/techniques could be used. These technologies would include chemical cleaning, brushing, washing, scrubbing, scabbling, vacuum cleaning, strippable coatings and similar technologies. Equipment and piping removal may include using wrenches, nibblers, shears, cutters and saws.

- 26) For this activity, the abated emissions limit for the 200 Area Diffuse/Fugitive emission unit is  $7.4E-3$  mrem per year to the maximum public receptor.
- 27) It is recognized that isotopes of uranium are present in very limited quantities at this facility, but are not of significance.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: DECONTAMINATION FOR TRANSITION OF THE 241-Z LIQUID WASTE  
TREATMENT FACILITY TO DEMOLITION**

Emission Unit Name: 241-Z PTRAEU'S (6 TOTAL)

Emission Unit ID 747

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA	1	Tested to ANSI N510 on an annual basis.
	Fan	1	Not to exceed 1000 CFM or the flow rating of the HEPA filter.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	40 CFR 61, Appendix B, Method 114.	TOTAL ALPHA	During operation of the PTRAEU.

**Sampling Requirements:** Periodic Confirmatory Measurements via surface surveys and portable air monitoring conducted during operation of the PTRAEU

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/15/2003 New NOC, DOE/RL-2002-72, Revision 0, received December 19, 2002. Revision, DOE/RL-2002-72, Revision 1, received June 2, 2003. Revision, DOE/RL-2002-72, Revision 2, received August 18, 2003. Draft License conditions issued November 17, 2003 via AIR 03-1108.

11/21/2003 Acceptance of Draft Conditions and Limitations received via fax on November 20, 2003, USDOE letter number 04-AMCP-0077. DOH approval letter, AIR 03-1109, mailed on November 21, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 7.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

defined in WAC 246-247-030(16), may be conducted.

The approved activity is to transition the 241-Z Building for dismantlement. All work shall be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological manual. These requirements shall be carried out through the activity work packages and associated radiological work permits.

The waste tank system is approved to continue to receive liquid waste from the 234-5Z Building, waste will continue to be sampled in the 241-ZA Sampling Building, and chemical treatment of the waste and transfer to Tank Farms concurrent with clean out activities are allowed to continue. In preparation for the proposed transition activities, housekeeping, bag out of contaminated waste from the sample glovebox, assays, routine and preventive maintenance, and minor decontamination will occur as part of continued operations.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is  $8.70E+00$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241		Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 241	1.40E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239		Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 239	9.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240		Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 240	2.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241		Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Pu -239	Pu -240	Pu -241
Am -241		

- The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESIAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.
- 5) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
  - 6) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
  - 7) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
  - 8) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
  - 9) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
  - 10) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
  - 11) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
  - 12) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

- 13) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 14) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 15) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 16) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 17) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 20) This approval applies to those additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

#### PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNITS

Existing PTRAEU equipment operated as Type I units under DOE/RL-96-75 will be used. The two existing units consist of one stage of testable HEPA filter (and additional testable HEPA filter stage in

series is allowed to facilitate contamination control) up stream of a commercial blower. Additional units used will be of similar design with independent filter unit(s) and a blower; a single stage integrated unit manufactured for this purpose of contamination control or a combination of an independent filter mated to a combination unit. Exhaust flow rate for the individual units may be as high as 1,000 cubic feet per minute (CFM) and for basis calculation purposes this flow rate for all units operating is assumed to be less than or equal to 1,000 CFM.

- 21) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

A PTRAEU shall be used in a similar manner as described in DOE/RL-96-75 to facilitate access to the belowgrade cells, aids in the management of wrapped but unsealed material removed from the cells and supports operations external to the space ventilated by the 296-Z-3 Stack. Up to six independent exhausters might be required to support this project. Each unit will represent potential emissions to the ambient air as a separate emission point. The following describes process operations:

A fraction of the facility inventory (up to 65 curies/year) of the plutonium associated with material external to the tank system could be wrapped and physically removed from the belowgrade cells. This material will be wrapped and packaged inside a temporary containment area set up at the entrance to the five cells. While normally the area is ventilated via the 296-Z-3 Stack, during periods when the area is isolated from the belowgrade ventilation using a containment devices, contaminated material could be stored inside the area while being ventilated by the PTRAEU unit(s). The material will be wrapped in plastic and stabilized by application of fixative before being removed from the cell and isolating the area from the 241-Z stack.

Contamination control associated with preparation for entry into the cells and post cell exit activities will be provided. This will include housekeeping activities, handling of contaminated clothing, and conducting surveys.

Contamination control associated with removal; size reduction packaging of the sample glovebox and associated piping from 241-ZA will be provided. Prior to removal, the sampling glovebox would be subjected to some decontamination and stabilization using fixatives while ventilated to the 296-Z-3 stack. Size reduction of equipment will be by mechanical means and could be accomplished by disassembly use of hand tools, wrenches, nibblers, shears, cutters, and saws. This equipment could be manually, hydraulically, pneumatically or electrically powered.

Decontamination, could be used within the PTRAEU. Decontamination of areas up to 20,000 dpm/100 cm<sup>2</sup> is allowed as long as airborne levels inside the temporary containment area do not exceed 4.5 E-10 uCi/ml alpha contamination on average for the period of operation.

- 22) The following controls are approved as low as reasonably achievable control technology (ALARA) for transition of the 241-Z Building.

Health physics technician (HPT) coverage will be provided, as necessary, during transition activities.

With the exception of periods when fogging operations are occurring, the existing ventilation system, exhausting through the 296-Z-3 Stack, will be operational during all transition activities.

Appropriate controls such as water, fixatives, covers, temporary containment tent, or windscreens will be applied if needed, as determined by the Health Physics organization as delineated in the site radiological control procedures.

Welding on contaminated surfaces will only occur if the affected area has been decontaminated to the extent practical. Welding on contaminated surfaces will not be conducted unless the effluent is exhausting through the 296-Z-3 Stack and contamination is below 20,000 dpm/100 cm<sup>2</sup> in the area to be welded.

As appropriate, before starting work on isolating utilities and piping, removable contamination in the affected area(s) might be reduced to ALARA. Measures such as expandable foam, strippable decontamination agents, fixatives, encapsulants or glovebags also could be used to help reduce contamination.

A temporary containment will be used at all times for radiological controls during access to the belowgrade cells.

When possible, ventilation for the containment will be provided by drawing air to the belowgrade cells and exhausted via the 296-Z-3 stack.

Any PTRAEU associated with the temporary containment will not be operated unless there is a physical barrier to minimize communication with a space ventilated by the 296-Z-3 stack.

Activities in the temporary containment being ventilated by the PTRAEU exhaustor while wrapped and stabilized (unsealed) materials are present will be limited to those that have a low risk of disturbing the wrapped stabilized items. Such activities could include performing routine surveys inside the temporary containment tents, removing the stabilized sample glovebox and associated piping, inspecting the material, preparing to open the access to the belowgrade cells or performing final closure of the waste container. Decontamination of areas up to 20,000 dpm/100 cm<sup>2</sup> is allowed as long as airborne levels inside the temporary containment are not expected to exceed the administrative limit  $4.5 \text{ E-10 uCi/ml}$  on average for the period of operation. Handling of stabilized contaminated materials including size reducing is allowed as long as airborne levels within the temporary containment do not exceed  $4.5 \text{ E-10 uCi/ml}$  alpha contamination on average for the period of operation.

- 23) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The approved activity is to transition the 241-Z Building. The transition activities will include the following.

Decontamination - Personnel entries will be made into the below-grade tank cells to decontaminate the area external to the tanks. Debris will be removed from the cells and disposed as solid waste. Debris will be size reduced as necessary using physical disassembly and or cutting as necessary to facilitate disposal of the waste. Both direct contact and remote technologies/techniques decontamination methods in use throughout industry and the DOE Complex today could be used. A water wash down



may be performed in the cells with existing sumps used to transfer the liquid waste to TK-D4 for eventual transfer to Tank Farms. A fogging agent, wetting and/or fixative agents will be applied as a fixative for loose contamination. This decontamination will facilitate later cell work and samples will be taken to support a RCRA closure plan and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 activities. This activity sampling may involve chipping or boring portions of the concrete surface or painted surfaces of the belowgrade cell. Additional entries will be made into the belowgrade tank cells to remove sludge and to decontaminate the tank interiors to facilitate later size reduction activities. The planning basis uses a high pressure multi-nozzle wash system to decontaminate the tank interiors but other approaches such as low pressure nozzles, chemical agents, agitators or pumps may be used to facilitate suspension or removal of the sludge material from the tanks. Closed loop liquid re-circulation with filtration may also be used to collect residual contamination. Reconfiguring the piping system to facilitate continued use of the facility concurrent with cleanout may occur. This reconfiguration may include breaking of existing piping and tubing to facilitate the installation of pumps, valves and other equipment within the 296-Z-3 ventilated area (i.e., below-grade cells or sample glovebox).

If radiological contamination is detected in locations in the 241-Z Building or 241-ZA Sampling Building not serviced by the 241-Z cell exhaust system, or in the 241-ZB Bulk Chemical Storage or 241-ZG Building, spot decontamination and/or stabilization shall be conducted. Such activities could result in fugitive and diffuse emissions. Removal of contamination may also use washing with decontamination agents and/or physical removal of part of the surface by mechanical means.

**Deactivation** - Deactivation will remove some active systems from service to support process equipment removal and decontamination activities. Deactivation will apply to the following systems: electrical, steam, criticality monitoring, and sanitary water. In addition, drain lines that currently route to the 241-Z Building from the PFP Complex will be isolated physically in the 234-5Z Building. In the 241-Z Building, after decontamination activities are completed, spool pieces will be removed from the two lines that can be used to transfer waste from TK-D5 to 244-TX. This will isolate the 241-Z Building from Tank Farms. This activity can include cutting of pipe or breaking flanges of the existing piping system. The ventilation system will be physically isolated (blanked off) from the 241-ZB Bulk Product tank D-9.

**Equipment Removal From Belowgrade Cells** - Removal of contaminated equipment will occur as part of the decontamination of the system components and the remediation of contaminated surfaces where needed. This equipment could include items such as ladders, grating, piping, pumps and agitators associated with the tanks that might have to be removed or replaced to facilitate decontamination of the tanks. Equipment will be size reduced, as necessary, using physical disassembly and or cutting as necessary to facilitate packaging as waste. Additionally, sections of piping could be cut and capped to facilitate removal of holdup material. Existing ventilation systems will be used to the extent possible to control air flow during the activities, supplemented by temporary containment required to be constructed to access the belowgrade cells. It is anticipated that a good portion of the waste generated by these activities will be classified as transuranic (TRU) waste and will be packaged in drums or solid waste boxes and disposed accordingly. Operations such as housekeeping preparation for cell entry and storing of wrapped stabilized contaminated items in unsealed containers as well as packaging operations such as opening the shipping containers, adding filler material, inspecting and installing final container closure in preparation for shipment may occur within a plastic containment enclosure set up above the cell entry. This space will routinely be ventilated by either the 296-Z-3 stack by providing ventilation communication to belowgrade cell via a cell access opening or by using a

portable temporary radioactive air emissions unit (PTRAEU) after a physical barrier is in place between the containment and the belowgrade cell.

**Equipment Removal** - Equipment removal activities will remove non-contaminated equipment and other non-contaminated components to facilitate future dismantlement. This would include items in the 241-Z Building, as well as the support buildings (the 241-ZA Sample Building and the 241-ZG Building). Non-contaminated equipment that may be removed includes light fixture ballasts and fluorescent lamps, criticality detectors, or other nonessential items. Contaminated and potentially contaminated equipment external to the cells may include tanks (D-9, D-10 and D-11), piping, pumps, sample glovebox in 241-ZA, control panels and other equipment external.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use throughout industry and the DOE Complex today. Both direct contact and remote technologies/techniques could be used. These technologies would include chemical cleaning, brushing, washing, scrubbing, scabbling, vacuum cleaning, strippable coatings and similar technologies. Equipment and piping removal may include using wrenches, nibblers, shears, cutters and saws.

- 24) For the six 241-Z PTRAEU's, the abated emission limit for each PTRAEU shall not exceed  $1.8 \text{ E-5}$  mrem/year to the maximum public receptor.
- 25) When a PTRAEU is used that provides potential emissions to the ambient air as a separate emission point, periodic confirmatory measurement (PCM) for emissions from these units will be performed by maintaining an operating log for each unit identifying the operating time, effluent flow rate, and confirmatory measurement reference information. The confirmatory measurement information will be from survey measurements taken within the temporary containment and typically will include surface surveys and portable air monitoring sampling conducted during operation of the PTRAEU. The information included will be the following:

Location of operation

Type of control equipment connected to the unit

Flow rate of the unit

Operator's name

Date(s) and time of startup/shutdown of ventilation system

PCM (radiological survey) reference.

- 26) It is recognized that isotopes of uranium are present in very limited quantities at this facility, but are not of significance.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 241-AN TANK FARM INSTALLATION AND OPERATION OF A NEW  
VENTILATION SYSTEM**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARC1 [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
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Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

04/10/2003 NOC: 241-AN Tank Farm Installation, Conditions and Limitations, AIR 03-602, mailed on June 3, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:  
Phase One activities described below.

At applicant request per WAC 246-247060 (1d), a phased approval process is implemented for this NOC, and this NOC is treated in review as a limited application. There are two phases. Phase One is installation of the new ventilation system. Conditional approval to construct is granted for the Phase One

activities:

1. Placement of the new exhauster (previously granted by email permission)
2. Connection of the new exhauster, to include ductwork, electrical, and instrumentation connections necessary to place the new exhauster in an operable state
3. Cold testing of the new exhauster
4. Hot testing of the new exhauster and associated ductwork and systems.

These activities shall not preclude modification, construction or installation of any control or monitoring equipment required after review of the completed application. By accepting the conditional approval of the Phase One activities, the applicant agrees to make in a timely manner such modification, construction, or installation as is deemed necessary during review of Phase Two activities to ensure compliance with 40 CFR 61 Subpart H and WAC 246-247.

Phase Two is removal of the old ventilation system and operation of the new ventilation system.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac 227	1.85E-02	Am-241	4.79E+03	Am-243	1.95E-01
Ba-137	m 8.01E+06	C 14	1.96E+02	Cd-113	m 8.93E+02
Cm-242	1.22E+01	Cm-243	1.04E+00	Cm-244	7.92E+00
Co 60	9.88E+02	Cs 134	7.27E+00	Cs-137	8.48E+06
Eu-152	4.64E+01	Eu 154	6.96E+03	Eu-155	4.39E+03
H-3	1.38E+02	I 129	4.15E+00	Nb-93	m 1.80E+02
Ni-59	2.00E+01	Ni 63	1.90E+03	Np-237	6.74E+00
Pa-231	5.05E-02	Pu-238	2.36E+01	Pu-239	4.10E+02
Pu-240	7.20E+01	Pu 241	6.91E+02	Pu-242	5.25E-03
Ra-226	1.83E-03	Ra 228	2.10E+00	Ru-106	9.78E-04
Sb-125	4.95E+02	Se-79	1.11E+01	Sm-151	1.52E+05
Sn-126	7.54E+01	Sr-90	1.05E+06	Tc-99	3.70E+03
Th-229	9.24E-02	Th 232	3.41E-01	U-232	1.32E+00
U-233	5.42E+00	U-234	1.64E+00	U-235	6.64E-02
U-236	5.32E-02	U-238	1.50E+00	Y-90	1.05E+06
Zr-93	2.25E+02				

- 5) The existing AN farm exhauster will continue in operation until the approval of Phase Two, except for a passive ventilation period not to exceed 24 hours during which the existing AN farm exhauster shall remain in an operable state. During this passive ventilation period, there shall be no AN farm transfers, mixing operations, or other AN farm in-tank or in-piping activities that might elevate tank vapor space radionuclide concentrations. Until approval of Phase Two, the new ventilation system shall not be relied upon for active ventilation of the AN farm (WAC 246-247-040(5)).
- 6) Before the new ventilation system is connected to the existing farm ductwork, a cold test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).
- 7) The new ventilation system shall tie into the existing ductwork at the portable exhauster connection flange, where a valve and blind flange are located above ground (WAC 246-247-040(5)).
- 8) The blind portable exhauster connection flange shall be removed in accord with ALARA principles (WAC 246-247-040(1)).
- 9) Once the new ventilation system is connected to the existing farm ductwork, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).
- 10) All activities performed under this NOC shall be performed in accord with ALARA principles (WAC 246-247-040(1)).
- 11) ALARACTs 4, 12, and 16 shall be applied as appropriate during the course of the installation (WAC 246-247-040(5)).
- 12) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
- 14) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 16) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 17) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 19) The department reserves the right to inspect and audit all construction activities, equipment, operations,

documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).

- 20) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 21) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 22) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 23) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 24) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 25) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 26) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 27) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 28) Diffuse/Fugitive emissions shall be monitored using the (200 Area) near-field ambient air monitors.

Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 241-AW TANK FARM INSTALLATION AND OPERATION OF A NEW  
VENTILATION SYSTEM**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

07/30/2003 NOC received January 27, 2003. Request for phased approval received June 11, 2003. Phase 1 draft conditions and limitations, AIR 03-709, mailed on July 30, 2003. Draft Conditions and Limitations accepted on July 31, 2003. Final Approval, AIR 03-712, mailed on August 1, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:  
Phase One activities described below.



At applicant request per WAC 246-247-060(1d), a phased approval process is implemented for this NOC, and this NOC is treated in review as a limited application. There are two phases. Phase One is installation of the new ventilation system. Conditional approval to construct is granted for the Phase One activities:

- \* Placement of the new exhauster;
- \* Connection of the new exhauster, to include ductwork, electrical, and instrumentation connections necessary to place the new exhauster in an operable state;
- \* Cold testing of the new exhauster;
- \* Hot testing of the new exhauster and associated ductwork and systems.

These activities shall not preclude modification, construction or installation of any control or monitoring equipment required after review of the completed application. By accepting the conditional approval of the Phase One activities, the applicant agrees to make in a timely manner such modification, construction, or installation as is deemed necessary during review of Phase Two activities to ensure compliance with 40 CFR 61 Subpart H and WAC 246-247.

Phase Two is removal of the old ventilation system and operation of the new ventilation system.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac 227	1.09E+02	Am - 241	2.55E+04	Am - 243	5.61E+00
Ba 137 m	5.67E+06	C 14	8.34E+01	Cd - 113 m	2.26E+03
Cm 242	2.30E+01	Cm 243	3.36E+00	Cm - 244	7.53E+01
Co 60	1.15E+03	Cs - 134	1.48E+04	Cs - 137	5.99E+06
Eu 152	3.96E+02	Eu - 154	1.37E+04	Eu - 155	1.77E+04
H 3	8.14E+02	I - 129	1.78E+00	Nb 93 m	6.98E+02
Ni - 59	3.22E+02	Ni - 63	3.01E+04	Np - 237	1.81E+01
Pa - 231	2.39E+02	Pu - 238	1.81E+03	Pu 239	9.36E+03
Pu 240	1.52E+03	Pu - 241	1.48E+04	Pu - 242	2.05E-01
Ra 226	2.16E-02	Ra - 228	2.26E+01	Ru - 106	6.21E+02
Sb 125	1.02E+04	Se - 79	1.79E+01	Sm - 151	6.36E+05
Sn - 126	6.37E+01	Sr - 90	5.01E+06	Tc 99	1.25E+03
Th 229	9.41E-01	Th - 232	5.58E+00	U 232	1.93E+01
U 233	4.13E+02	U - 234	2.08E+01	U 235	6.03E-01
U - 236	6.84E-01	U - 238	1.25E+01	Y 90	5.01E+06
Zr 93	7.75E+02				

- 5) The existing AW farm exhauster will continue in operation until the approval of Phase Two, except for a passive ventilation period not to exceed 24 hours during which the existing AW farm exhauster shall remain in an operable state. During this passive ventilation period, there shall be no AW farm transfers, mixing operations, or other AW farm in-tank or in-piping activities that might elevate tank vapor space radionuclide concentrations. Until approval of Phase Two, the new ventilation system shall not be relied upon for active ventilation of the AW farm (WAC 246-247-040(5)).
- 6) Before the new ventilation system is connected to the existing farm ductwork, a cold test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).
- 7) The new ventilation system shall tie into the existing ductwork at the portable exhauster connection

- flange, where a valve and blind flange are located above ground (WAC 246-247-040(5)).
- 8) The blind portable exhauster connection flange shall be removed in accord with ALARA principles (WAC 246-247-040(1)).
  - 9) Once the new ventilation system is connected to the existing farm ductwork, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).
  - 10) All activities performed under this NOC shall be performed in accord with ALARA principles (WAC 246-247-040(1)).
  - 11) ALARACTs 4, 12, and 16 shall be applied as appropriate during the course of the installation (WAC 246-247-040(5)).
  - 12) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
  - 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
  - 14) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
  - 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
  - 16) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
  - 17) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
  - 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
  - 19) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
  - 20) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
  - 21) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
  - 22) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
  - 23) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable

standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).

- 24) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 25) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 26) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 27) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 28) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 29) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air

emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-040(9)).

- 30) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).

**DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR**

**PROJECT TITLE: 241-S-102 INSTALLATION AND OPERATION OF WASTE RETRIEVAL  
SYSTEMS**

Emission Unit Name: 296-P-43

Emission Unit ID 57

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Prefilter	1	
	Heater	1	
	HEPA	2	HEPAs in series
	Fan	1	
	Demister	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential EDE.	Continuous

**Sampling Requirements:** Continuous during emission unit operation.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

07/21/2003 NDC received February 6, 2003. Draft Conditions and Limitations, AIR 03-706, mailed on July 22, 2003. Draft Conditions and Limitations accepted on July 22, 2003. Final Approval, AIR 03-708, mailed on July 25, 2003.

02/19/2004 NOC revision received February 19, 2004 to add an emission unit, 296-P-44. Approved via AIR 04-501, dated May 5, 2004. Conditions and Limitations, AIR 04-503, mailed on May 17, 2004 to make process description changes that were not addressed in AIR 04-501. Voids AIR 04-501.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for

this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

**Pit Work (Diffuse and Fugitive):**

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HHITL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

**Soil Excavation (Diffuse and Fugitive):**

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HHITL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

**Other Equipment Installation/Removal (Diffuse and Fugitive):**

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1, 13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

**Water Dilution and Waste Transfer:**

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HHITL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

# Waste Transfer (S102):

- The new progressive cavity pump and HIFIL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

## 4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	1.34E-03	Am - 241	1.23E+02	Am - 243	4.20E-03
Ba - 137 m	2.41E+05	C - 14	4.78E+01	Cd - 113 m	6.95E+01
Cm - 242	3.02E-01	Cm - 243	2.41E-02	Cm - 244	2.17E-01
Co - 60	1.76E+01	Cs - 134	3.54E-01	Cs - 137	2.55E+05
Eu - 152	3.50E+00	Eu - 154	2.46E+02	Eu - 155	2.70E+02
H - 3	2.09E+02	I - 129	6.81E-01	Nb - 93 m	1.39E+01
Ni - 59	3.00E+00	Ni - 63	2.75E+02	Np - 237	1.30E+00
Pa - 231	4.82E-03	Pu - 238	2.96E+00	Pu - 239	1.15E+02
Pu - 240	1.90E+01	Pu - 241	1.49E+02	Pu - 242	1.14E-03
Ra - 226	2.47E-04	Ra - 228	8.89E-02	Ru - 106	5.74E-05
Sb - 125	3.18E+01	Se - 79	3.88E-01	Sm - 151	1.30E+04
Sn - 126	2.35E+00	Sr - 90	9.29E+04	Tc - 99	2.17E+02
Th - 229	2.20E-03	Th - 232	9.50E-03	U - 232	1.42E+00
U - 233	5.83E+00	U - 234	1.81E+00	U - 235	7.35E-02
U - 236	5.63E-02	U - 238	1.65E+00	Y - 90	9.29E+04
Zr - 93	1.90E+01				

- The total abated emission limit for 296-P-43 or 296-P-44 under this Notice of Construction is limited to 1.77E-01 to the Maximally Exposed Individual. The total unabated emission limit on the Potential-to-Emit for 296-P-43 or 296-P-44 under this Notice of Construction is limited to 8.4E+01 mrem/year to the Maximally Exposed Individual [WAC 246-247-040(5)].
- All activities performed under this NOC shall be performed in accordance with ALARA principles [WAC 246-247-040(1)].
- A cold test shall be performed on the portable exhauster system. An acceptance test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].
- Once the portable exhauster system is connected to tank 241-S-102, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].
- The portable exhauster shall provide two banks of HEPA filters in series, and the glycol heater shall be provided with an automatic heater trip function actuated by exhaust stream temperature indication. The trip set point shall be set below 200 degrees F. HEPA's shall be individually aerosol tested, annually, to the requirements of ASME NS10, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].
- Demonstration of ventilation system water removal capability (adequate to ensure against excessive HEPA loading during diluent addition via the spray devices) shall be provided to WDOH one month prior to the operation of the exhauster [WAC 246-247-040(5)].
- The portable exhauster shall operate continuously when water is being added to the tank via the spray

devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to shutdown of active ventilation. Passive breather filter ventilation may be used when there is no dilution water delivery via the spray devices [WAC 246-247-040(5)].

- 12) Licensee shall provide a written justification for use of a humidity probe in determining stack gas moisture content under 40 CFR 60 Appendix A, Method 2. Retrieval operations shall not proceed under this NOC until WDOH has approved the justification [WAC 246-247-040(5)].
- 13) The following shall be provided to WDOH for review one month prior to commencement of waste retrieval operations:
  - 1) Code compliance matrix for exhauster and new ventilation system;
  - 2) Exhauster design specifications;
  - 3) Copies of exhauster manufacturer's qualification test records;
  - 4) Operating procedures or other documentation demonstrating administrative/other controls adequate to ensure conformance of exhauster/vent system and waste retrieval operations to the conditions and limitations of this NOC.

If part or all of this information has been previously provided for this particular exhauster under another NOC requiring BARCT, a written reference to the WDOH approval letter shall constitute fulfillment of this condition [WAC 246-247-040(5)].

- 14) A written technical basis for the stack monitoring system, as required by ANSI 13.1-1999, Section 4, shall be provided to WDOH. Dilution operations under this NOC shall not commence until WDOH has reviewed the stack monitoring technical basis.

If part or all of this information has been previously provided for this particular stack under another NOC requiring BARCT, a written reference to the WDOH approval letter shall constitute fulfillment of this condition [WAC 246-247-040(5)].

- 15) A copy of the hose-in-hose transfer line management plan accepted by the Washington State Department of Ecology as meeting WAC-173-303 for hazardous waste lines shall be provided to WDOH, RPP-12711 [WAC 246-247-040(5)].
- 16) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be logged and retained [WAC 246-247-040(5)].
- 17) Monthly checks shall be performed on the exhaust duct to ensure there is no degradation of the ductwork or leakage at the connection points [WAC 246-247-040(5)].
- 18) By October 25, 2003, and thereafter as individually noted below, the emission unit monitoring system shall have the following activities performed:
  - a. Inspect pitot tube systems for leaks, at least annually.
  - b. Inspect nozzles for alignment, presence of deposits, damage to sharp-edged nozzles, or other potentially degrading factors (corrosion, physical damage, etc) at least annually.
  - c. Check transport lines and if visible deposits are present perform cleaning, at least annually.
  - d. Checks to ensure the tightness of all fittings and connections as well as a leak test of the sample system, at least annually.
  - e. Inspect rotameters of sampling systems for presence of foreign matter at the start of each sampling period (no rotameters - subcondition e. is not applicable here.)



- f. Check the response of stack flow rate monitoring and control system at least quarterly.
- g. A functional/calibration check of monitoring system instrumentation shall be performed at least annually.
- h. USDOE shall provide to WDOH for review copies of the procedures used to perform the above activities.

[WAC 246-247-040(5)]

- 19) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 20) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 21) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 22) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 23) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 24) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 25) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 26) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 27) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 28) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).
- 29) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 30) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3), or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 31) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the

shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 32) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 33) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 34) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 35) Radionuclides requiring measurement under this license are: Cs-137, Sr-90, Pu-239, Pu-240, Am-241, gross alpha, gross beta.
- 36) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 37) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall

expire when the radioactive materials license expires (WAC 246-247-060(6)).

**DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR**

**PROJECT TITLE: 241-S-102 INSTALLATION AND OPERATION OF WASTE RETRIEVAL  
SYSTEMS**

Emission Unit Name: 296-P-44

Emission Unit ID 58

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Prefilter	1	
	Heater	1	
	HEPA	2	2 HEPAs in series
	Fan	1	Fan is in operational stand-by
	Demister	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	40 CFR 61, Appendix B, Method 114.	All radionuclides which could contribute 10% of the potential EDE.	Continuous, collect samples biweekly at a minimum

Sampling Requirements: Active ventilation: continuous during operation.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

07/21/2003 NOC received February 6, 2003. Draft Conditions and Limitations, AIR 03-706, mailed on July 22, 2003. Draft Conditions and Limitations accepted on July 22, 2003. Final Approval, AIR 03-708, mailed on July 25, 2003.

02/19/2004 NOC revision received February 19, 2004 to add an emission unit, 296-P-44. Approved via AIR 04-501, dated May 5, 2004. Conditions and Limitations, AIR 04-503, mailed on May 17, 2004 to make process description changes that were not addressed in AIR 04-501. Voids AIR 04-501.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for

this Notice of Construction is limited to 8.40E101 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

**Pit Work (Diffuse and Fugitive):**

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

**Soil Excavation (Diffuse and Fugitive):**

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

**Other Equipment Installation/Removal (Diffuse and Fugitive):**

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, IINF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

**Water Dilution and Waste Transfer:**

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	1.34E-03	Am - 241	1.23E+02	Am - 243	4.20E-03
Ba 137 m	2.41E+05	C - 14	4.78E+01	Cd - 113 m	6.95E+01
Cm 242	3.02E-01	Cm - 243	2.41E-02	Cm - 244	2.17E-01
Co - 60	1.76E+01	Cs - 134	3.54E-01	Cs - 137	2.55E+05
Eu 152	3.50E+00	Eu - 154	2.46E+02	Eu - 155	2.70E+02
H - 3	2.09E+02	I - 129	6.81E-01	Nb - 93 m	1.39E+01
Ni - 59	3.00E+00	Ni - 63	2.75E+02	Np - 237	1.30E+00
Pa - 231	4.82E-03	Pu - 238	2.96E+00	Pu - 239	1.15E+02
Pu - 240	1.90E+01	Pu 241	1.49E+02	Pu - 242	1.14E-03
Ra - 226	2.47E-04	Ra 228	8.89E-02	Ru - 106	5.74E-05
Sb - 125	3.18E+01	Se 79	3.88E-01	Sm - 151	1.30E+04
Sn - 126	2.35E+00	Sr - 90	9.29E+04	Tc - 99	2.17E+02
Th - 229	2.20E-03	Th - 232	9.50E-03	U - 232	1.42E+00
U - 233	5.83E+00	U 234	1.81E+00	U - 235	7.35E-02
U 236	5.63E-02	U - 238	1.65E+00	Y - 90	9.29E+04
Zr - 93	1.90E+01				

- The portable exhauster shall provide two banks of HEPA filters in series, and the glycol heater shall be provided with an automatic heater trip function actuated by exhaust stream temperature indication. The trip set point shall be set below 200 degrees F. HEPAs shall be individually aerosol tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].
- The portable exhauster shall operate continuously when water is being added to the tank via the spray devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to shutdown of active ventilation. Passive breather filter ventilation may be used when there is no dilution water delivery via the spray devices [WAC 246-247-040(5)].
- The following shall be provided to WDOH for review one month prior to commencement of waste retrieval operations:
  - 1) Code compliance matrix for exhauster and new ventilation system;
  - 2) Exhauster design specifications;
  - 3) Copies of exhauster manufacturer's qualification test records;
  - 4) Operating procedures or other documentation demonstrating administrative/other controls adequate to ensure conformance of exhauster/vent system and waste retrieval operations to the conditions and limitations of this NOC.

If part or all of this information has been previously provided for this particular exhauster under another NOC requiring BARCT, a written reference to the WDOH approval letter shall constitute fulfillment of this condition [WAC 246-247-040(5)].

- 8) All activities performed under this NOC shall be performed in accordance with ALARA principles [WAC 246-247-040(1)].
- 9) Once the portable exhaust system is connected to tank 241-S-102, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].
- 10) A written technical basis for the stack monitoring system, as required by ANSI 13.1-1999, Section 4, shall be provided to WDOH. Dilution operations under this NOC shall not commence until WDOH has reviewed the stack monitoring technical basis.

If part or all of this information has been previously provided for this particular stack under another NOC requiring BARCT, a written reference to the WDOH approval letter shall constitute fulfillment of this condition [WAC 246-247-040(5)].

- 11) A copy of the hose-in-hose transfer line management plan accepted by the Washington State Department of Ecology as meeting WAC-173-303 for hazardous waste lines shall be provided to WDOH, RPP-12711 [WAC 246-247-040(5)].
- 12) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be logged and retained [WAC 246-247-040(5)].
- 13) Monthly checks shall be performed on the exhaust duct to ensure there is no degradation of the ductwork or leakage at the connection points [WAC 246-247-040(5)].
- 14) By October 25, 2003, and thereafter as individually noted below, the emission unit monitoring system shall have the following activities performed:
  - a. Inspect pitot tube systems for leaks, at least annually.
  - b. Inspect nozzles for alignment, presence of deposits, damage to sharp-edged nozzles, or other potentially degrading factors (corrosion, physical damage, etc) at least annually.
  - c. Check transport lines and if visible deposits are presents perform cleaning, at least annually.
  - d. Checks to ensure the tightness of all fittings and connections as well as a leak test of the sample system, at least annually.
  - e. Inspect rotameters of sampling systems for presence of foreign matter at the start of each sampling period (no rotameters - subcondition e. is not applicable here.)
  - f. Check the response of stack flow rate monitoring and control system at least quarterly.
  - g. A functional/calibration check of monitoring system instrumentation shall be performed at least annually.
  - h. USDOE shall provide to WDOH for review copies of the procedures used to perform the above activities.

[WAC 246-247-040(5)]

- 15) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 16) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 17) The facility shall notify the department seven days in advance of any planned pre-operational testing of

the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).

- 18) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 19) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 20) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 21) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 22) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 23) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 24) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 25) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 26) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3), or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 27) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 28) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and



documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 29) Demonstration of ventilation system water removal capability (adequate to ensure against excessive HEPA loading during diluent addition via the spray devices) shall be provided to WDOH one month prior to the operation of the exhauster [WAC 246-247-040(5)].
- 30) Licensee shall provide a written justification for use of a humidity probe in determining stack gas moisture content under 40 CFR 60 Appendix A, Method 2. Retrieval operations shall not proceed under this NOC until WDOH has approved the justification [WAC 246-247-040(5)].
- 31) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 32) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 33) Radionuclides requiring measurement under this license are: Cs-137, Sr-90, Pu-239, Pu-240, Am-241, gross alpha, gross beta.
- 34) The total abated emission limit for 296-P-43 or 296-P-44 under this Notice of Construction is limited to  $1.77\text{E-}01$  to the Maximally Exposed Individual. The total unabated emission limit on the Potential-to-Emit for 296-P-43 or 296-P-44 under this Notice of Construction is limited to  $8.4\text{E+}01$  mrem/year to the Maximally Exposed Individual [WAC 246-247-040(5)].
- 35) A cold test shall be performed on the portable exhauster system. An acceptance test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].
- 36) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 37) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall

expire when the radioactive materials license expires (WAC 246-247-060(6)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 241-S-102 INSTALLATION AND OPERATION OF WASTE RETRIEVAL  
SYSTEMS**

Emission Unit Name: S102

Emission Unit ID 134

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: ALARACT

ALARACT[WAC 246-247-040(4)]  
BARCT[WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	HEPA		Single Passive HEPA Filter

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides that contribute greater than 10 percent of the potential-to-emit TEDE to the MEL, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEL, and greater than 25 percent of the TEDE to the MEL after controls	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

07/21/2003 NOC received February 6, 2003. Draft Conditions and Limitations, AIR 03-706, mailed on July 22, 2003. Draft Conditions and Limitations accepted on July 22, 2003. Final Approval, AIR 03-708, mailed on July 25, 2003.

02/19/2004 NOC revision received February 19, 2004 to add an emission unit, 296-P-44. Approved via AIR 04-501, dated May 5, 2004. Conditions and Limitations, AIR 04-503, mailed on May 17, 2004 to make process description changes that were not addressed in AIR 04-501. Voids AIR 04-501.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for

this Notice of Construction is limited to  $8.40\text{E}+01$  mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

**Pit Work (Diffuse and Fugitive):**

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhaustor (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

**Soil Excavation (Diffuse and Fugitive):**

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

**Other Equipment Installation/Removal (Diffuse and Fugitive):**

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhaustor and exhaustor system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1, 13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

**Water Dilution and Waste Transfer:**

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhaustor(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.79E-03	Cs - 137	1.49E-05	Sr - 90	1.96E-03
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- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitations in the license. Applicable standards(WAC246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1) , BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the

shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Periodic confirmatory monitoring shall be conducted by verifying the levels of smearable contamination of the inside surface of the ducting downstream of the passive breather HEPA filter or on the screen covering the outlet of the vent. This monitoring shall be conducted after one month of exhaust operation (operating hours basis), and annually thereafter. This monitoring shall be recorded and retained. Abated emissions dose equal to or less than those given below shall be confirmed:  
  
The total abated emission limit for S102 (passive ventilation mode) under this Notice of Construction is limited to 3.0 E-04 to the Maximally Exposed Individual. The total unabated emission limit on the Potential-to-Emit for S102 (passive ventilation mode) under this Notice of Construction is limited to 3.0 E-02 mrem/year to the Maximally Exposed Individual [WAC 246-247-040(5)].
- 22) Radiological monitoring shall be performed in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.
- 23) The tank shall be ventilated through the passive breather filter (consisting of a single HEPA filter) only when no water is being added to the tank via the spray devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to resumption of spray water addition. Each HEPA filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 241-S-102 INSTALLATION AND OPERATION OF WASTE RETRIEVAL  
SYSTEMS**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Excavation Restriction		Abatement controls as required in the following Conditions and Limitations.
	Fixatives (paint, water, dust suppressants)		Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

07/21/2003 NOC received February 6, 2003. Draft Conditions and Limitations, AIR 03-706, mailed on July 22, 2003. Draft Conditions and Limitations accepted on July 22, 2003. Final Approval, AIR 03-706, mailed on July 25, 2003.

02/10/2004 NOC revision received February 19, 2004 to add an emission unit, 296-P-44. Approved via AIR 04-501, dated May 5, 2004. Conditions and Limitations, AIR 04-503, mailed on May 17, 2004 to make process description changes that were not addressed in AIR 04-501. Voids AIR 04-501.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

**Pit Work (Diffuse and Fugitive):**

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

**Soil Excavation (Diffuse and Fugitive):**

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

**Other Equipment Installation/Removal (Diffuse and Fugitive):**

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

**Water Dilution and Waste Transfer:**

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

**Waste Transfer (S102):**



- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	2.53E-02		Sr - 90	2.51E-01	
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- 5) The total diffuse and fugitive abated emission limit for this Notice of Construction is limited to 4.32E-04 mrem/year to the Maximally Exposed Individual. The total unabated diffuse and fugitive emission limit for this Notice of Construction is limited to 4.32E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 6) ALARACTs 1, 4, 5, 6, 11, 12, 13, 14, 15, and 16 shall be used as detailed in Condition 3 above [WAC 246-247-040(5)].
- 7) Radiological monitoring of all soil excavation work shall be performed and documented to ensure releases remain within releases estimated in the NOC. Soil volume excavated shall be tracked and documented and shall not exceed 1,000 cubic feet. Soil shall be monitored per ALARACT 5. Contamination levels for excavation shall remain on average equal to or less than:
- 8.0 E -04 dpm/100 sq. cm. Beta  
2.0 E+02 dpm/100 sq. cm. Alpha
- [WAC 246-247-040(5)].
- 8) Radiological monitoring of all pit openings and pit work shall be performed and documented to ensure that maximum pit surface/pit contents contamination levels remain on average below those assumed in NOC release estimates for these activities:
- 1.0 E+05 dpm/100 sq. cm. Beta/Gamma  
20 dpm/100 sq. cm. Alpha
- No more than 10 pit openings shall occur. These shall be tracked and documented. The total surface area of pits opened plus the surface area of pit contents shall not exceed 5,000 square feet [WAC 246-247-040(5)].
- 9) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 10) Containments shall be used in removing the hydrogen probe, the motor controlled spray devices, and the automatic spray indexing devices from the tank [WAC 246-247-040(5)].
- 11) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 12) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 13) The facility shall notify the department seven days in advance of any planned pre-operational testing of

the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).

- 14) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 15) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 16) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 17) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 18) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 21) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 22) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3), or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5), (WAC 246-247-080(5)).
- 23) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 24) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and

documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 25) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 26) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR  
**PROJECT TITLE: TANK FARM DECONTAMINATION TRAILERS**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

05/15/2003 NOC Tank Farms Decontamination Trailers, DOE letter number 03-ED-025, received February 24, 2003. Conditions and Limitations, AIR 03-502, mailed on May 23, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.66E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.66E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:**  
the following general chemical and physical processes associated with the decontamination activities in the decontamination trailer:

1. Upon identification of the need of additional decontamination activities in the individuals would be escorted to the nearest decontamination trailer.
2. As appropriate, contaminated clothing, coverings, and/or articles would be removed and packaged for laboratory analysis and/or disposition, in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) 4 and 12, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste and Tank Farm ALARACT Demonstration for Packaging and Transportation of Equipment and Vehicles, RPP HNF-4327.
3. Personnel decontamination processes might include various methods or a combination of cleaning agents and /or chemicals. For example: soap and water; pre-moistened towelettes, removal of hair, abrasive soaps for toughened skin surfaces (e.g., hands and feet), and chelating agents.
4. Spent decontamination solutions would be transferred from the holding tanks and/or bladder and containerized (e.g., packaged in absorbents in drums or placed in drums or carboys) and transported to existing facilities on the Hanford Site for disposal.
5. Periodic maintenance inspection of the decontamination trailers will be performed without the use of containment or portable exhausters.

**4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Pu 239	1.40E-01	Sr - 90	1.40E-01
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- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).

- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 14) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 15) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting, requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 16) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 17) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 18) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 19) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.

- 20) When Portable Temporary Radioactive Air Emission Units are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for Portable Temporary Radioactive Air Emission Units (DOE/RL-96-75).
- 21) The proposed PCM for the diffuse and fugitive emissions shall consist of the radiological surveys during and at the completion of personnel decontamination operations (e.g., smears and direct readings on the interior of the decontamination trailers). The methods of PCM are not a direct measurement of effluent emissions. The methods are intended to demonstrate compliance by showing that the levels on the interior of the trailers, during a personnel decontamination operation, are controlled; and the levels on the interior of the trailers after a decontamination operation shall keep the trailers from being posted a radiological buffer area (RBA) for contamination control and/or a contamination area (CA). This shall make the actual emissions below the estimated emissions, which shall be based and calculated from the same contamination levels.
- 22) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 23) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: ISOLATION AND CLOSURE OF EXHAUST STACKS 296-A-25, 296-B-28, 296-S-22 AND 296-T-18**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALABACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations

**Additional:** monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

06/25/2003 NOC, DOE letter number 03-ED-044, received March 24, 2003. Conditions and Limitations, approval letter AIR 03-611, mailed on June 27, 2003.

### CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:**  
the following DCRT and associated stacks: 244-A (296-A-25), 244-BX (296-B-28), 244-S (296-S-22), and 244-TX (296-T-18):



## 244-A DCRT (296-A-25 STACK)

### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank, in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape through the breather filter while collecting any airborne radioactive particulates.

A passive ventilation breather filter system shall be installed above-grade on an existing riser or the existing annulus inlet filter riser, in accordance with ALARACT 1 and 16 "TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components". The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter systems will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-A DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-A-25 exhaustor is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with American Society of Mechanical Engineers (ASME) B31.3 and tested in accordance with ASME AG-1.

### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-A DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system, in accordance with ALARACT Demonstrations 6 and 14. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

### 296-A-25 Stack Isolation:

The 296-A-25 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade, in accordance with ALARACT Demonstration 16

#### 244-BX DCRT (296-B-28 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT Demonstration 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-BX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-BX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT Demonstration 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-B-28 Stack Isolation:

The 296-B-28 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be

cut and capped above grade. This work will be in accordance with ALARACT 16.

#### 244-S DCRT (296-S-22 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

#### 244-TX DCRT (296-T-18 STACK)

##### Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust

stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha	0	1.80E-06	Beta	0	8.80E-02
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- 5) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 7) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 8) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 11) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 12) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 13) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 14) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).
- 15) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 16) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 17) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or

monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 18) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 19) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 20) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) The Annual Possession Quantity shall be tracked on a WDOH approved log.
- 23) The emission limit for all diffuse and fugitive emissions shall not exceed 1.0E-06 mrem/year.
- 24) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires. (WAC 246-247-060 (6)).
- 25) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold

a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. (WAC 246-247-040 (9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: ISOLATION AND CLOSURE OF EXHAUST STACKS 296-A-25, 296-B-28, 296-S-22 AND 296-T-18**

Emission Unit Name: 244-A PRIMARY HEPA

Emission Unit ID 738

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA		Single Breather Filter

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions	1 per year

Sampling Requirements: PCM will be a smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

06/25/2003 NOC DOE letter number 03-ED-044, received March 24, 2003. Conditions and Limitations, approval letter AIR 03-611, mailed on June 27, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:  
the following DCRT and associated stacks: 244-A (296-A-25), 244-BX (296-B-28), 244-S (296-S-22), and 244-TX (296-T-18);

Printed on 26-Jun-03



## 244-A DCRT (296-A-25 STACK)

### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank, in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape through the breather filter while collecting any airborne radioactive particulates.

A passive ventilation breather filter system shall be installed above-grade on an existing riser or the existing annulus inlet filter riser, in accordance with ALARACT 1 and 16 "TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components". The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter systems will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-A DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-A-25 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with American Society of Mechanical Engineers (ASME) B31.3 and tested in accordance with ASME AG-1.

### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-A DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system, in accordance with ALARACT Demonstrations 6 and 14. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

### 296-A-25 Stack Isolation:

The 296-A-25 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade, in accordance with ALARACT Demonstration 16.

#### 244-BX DCRT (296-B-28 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT Demonstration 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-BX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-BX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT Demonstration 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-B-28 Stack Isolation:

The 296-B-28 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be

cut and capped above grade. This work will be in accordance with ALARACT 16.

#### 244-S DCRT (296-S-22 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

#### 244-TX DCRT (296-T-18 STACK)

##### Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust

stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac 227	2.04E-02	Am 241	1.17E+01	Am - 243	3.58E-04
Ba 137 m	2.69E+03	C 14	4.06E-01	Cd 113 m	1.40E+00
Cm 242	1.19E-02	Cm 243	6.91E-04	Cm - 244	1.26E-02
Co 60	6.18E-01	Cs 134	6.84E-03	Cs - 137	2.84E+03
Eu 152	1.18E-01	Eu - 154	9.29E+00	Eu - 155	5.09E+00
H 3	1.53E+00	I - 129	5.01E-03	Nb - 93 m	4.18E-01
Ni 59	1.57E-01	Ni 63	1.46E+01	Np - 237	9.67E-03
Pa 231	4.25E-02	Pu 238	4.84E-01	Pu - 239	9.45E+00
Pu - 240	1.57E+00	Pu - 241	1.23E+01	Pu - 242	8.61E-05
Ra 226	3.73E-02	Ra - 228	8.82E-03	Ru - 106	8.01E-06
Sb 125	6.95E-01	Se - 79	1.22E-02	Sm - 151	3.74E+02
Sn 126	6.02E-02	Sr - 90	5.31E+03	Tc - 99	2.76E+00
Th 229	4.01E-03	Th - 232	1.13E-03	U - 232	6.22E-03
U 233	7.78E-02	U - 234	3.07E-02	U - 235	1.28E-03
U 236	6.36E-04	U 238	2.87E-02	Y 90 m	5.31E+03
Zr 93	5.03E-01				

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 6) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 7) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 8) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 9) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 10) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 12) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 13) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 14) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 15) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 16) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 17) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 21) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 22) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
- 23) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-A DCRT.
- 24) The emissions shall be limited to  $2.81\text{E-}02$  mrem/year unabated and  $2.81\text{E-}04$  mrem/yr abated.
- 25) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires. (WAC 246-247-060 (6)).
- 26) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. (WAC 246-247-040 (9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: ISOLATION AND CLOSURE OF EXHAUST STACKS 296-A-25, 296-B-28, 296-S-22 AND 296-T-18**

Emission Unit Name: 244-BX PRIMARY HEPA

Emission Unit ID 740

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA		Single Breather Filter

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075		Levels below 10,000 dpm/100cm <sup>2</sup> beta/gamma and 200 dpm/100cm <sup>2</sup> alpha will verify low emissions.	1 per year

**Sampling Requirements:** PCM will be a smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

06/25/2003 NOC, DOE letter number 03-ED-044, received March 24, 2003 Conditions and Limitations, approval letter AIR 03-611, mailed on June 27, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:**  
the following DCRT and associated stacks: 244-A (296-A-25), 244-BX (296-B-28), 244-S (296-S-22), and 244-TX (296-T-18):



## 244-A DCRT (296-A-25 STACK)

### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank, in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape through the breather filter while collecting any airborne radioactive particulates.

A passive ventilation breather filter system shall be installed above-grade on an existing riser or the existing annulus inlet filter riser, in accordance with ALARACT 1 and 16 "TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components". The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter systems will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-A DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-A-25 exhaustor is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with American Society of Mechanical Engineers (ASME) B31.3 and tested in accordance with ASME AG-1.

### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-A DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system, in accordance with ALARACT Demonstrations 6 and 14. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

### 296-A-25 Stack Isolation:

The 296-A-25 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade, in accordance with ALARACT Demonstration 16.

#### **244-BX DCRT (296-B-28 STACK)**

##### **Passive Ventilation Breather Filter System Installation:**

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT Demonstration 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### **HEPA Filter Bank Isolation and Removal:**

Removal of the HEPA filter bank in the 244-BX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be in accordance with ALARACT 16.

##### **Electrical Equipment and Instrumentation Isolation:**

The isolation of electrical equipment and instrumentation on the 244-BX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT Demonstration 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### **296-B-28 Stack Isolation:**

The 296-B-28 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be

cut and capped above grade. This work will be in accordance with ALARACT 16.

#### 244-S DCRT (296-S-22 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

#### 244-TX DCRT (296-T-18 STACK)

##### Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust

stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac 227	4.12E-02	Am 241	2.37E+01	Am - 243	7.23E-04
Ba 137 m	5.43E+03	C 14	8.19E-01	Cd 113 m	2.83E+00
Cm 242	2.40E-02	Cm 243	1.39E-03	Cm 244	2.56E-02
Co 60	1.25E+00	Cs 134	1.38E-02	Cs 137	5.74E+03
Eu 152	2.38E-01	Eu 154	1.88E+01	Eu - 155	1.03E+01
H - 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni 59	3.18E-01	Ni 63	2.95E+01	Np - 237	1.95E-02
Pa 231	8.58E-02	Pu 238	9.78E-01	Pu 239	1.91E+01
Pu 240	3.17E+00	Pu 241	2.48E+01	Pu 242	1.74E-04
Ra 226	7.54E-02	Ra 228	1.78E-02	Ru 106	1.62E-05
Sb 125	1.40E+00	Se 79	2.46E-02	Sm - 151	7.55E+02
Sn - 126	1.22E-01	Sr - 90	1.07E+04	Tc - 99	5.57E+00
Th 229	8.09E-03	Th - 232	2.28E-03	U - 232	1.26E-02
U - 233	1.57E-01	U 234	6.19E-02	U 235	2.59E-03
U 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr 93	1.02E+00				

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 6) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 7) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 8) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 9) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 10) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 12) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 13) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 14) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 15) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 16) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 17) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 21) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 22) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
- 23) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-BX DCRT.
- 24) The emissions shall be limited to  $2.81\text{E-}02$  mrem/yr unabated and  $2.81\text{E-}04$  mrem/yr abated.
- 25) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires. (WAC 246-247-060 (6)).
- 26) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. (WAC 246-247-040 (9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: ISOLATION AND CLOSURE OF EXHAUST STACKS 296-A-25, 296-B-28, 296-S-22 AND 296-T-18**

Emission Unit Name: 244-S PRIMARY HEPA

Emission Unit ID 742

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA		Single Breather Filter

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075		Levels below 10,000 dpm/100cm <sup>2</sup> beta/gamma and 200 dpm/100cm <sup>2</sup> alpha will verify low emissions.	1 per year

**Sampling Requirements:** PCM will be a smear survey on the inside surface of the ducting and downstream of the HEPA filter  
or on the outside of the screen covering the outlet of the vent

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

05/25/2003 NOC, DOE letter number 03-ED-044, received March 24, 2003. Conditions and Limitations, approval letter AIR 03-611,  
mailed on June 27, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:  
the following DCRT and associated stacks: 244-A (296-A-25), 244-BX (296-B-28), 244-S (296-S-22), and 244-TX (296-T-18);



## 244-A DCRT (296-A-25 STACK)

### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank, in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape through the breather filter while collecting any airborne radioactive particulates.

A passive ventilation breather filter system shall be installed above-grade on an existing riser or the existing annulus inlet filter riser, in accordance with ALARACT 1 and 16 "TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components". The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter systems will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-A DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-A-25 exhaustor is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with American Society of Mechanical Engineers (ASME) B31.3 and tested in accordance with ASME AG-1.

### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-A DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system, in accordance with ALARACT Demonstrations 6 and 14. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

### 296-A-25 Stack Isolation:

The 296-A-25 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade, in accordance with ALARACT Demonstration 16.

#### 244-BX DCRT (296-B-28 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT Demonstration 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-BX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-BX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT Demonstration 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-B-28 Stack Isolation:

The 296-B-28 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be

cut and capped above grade. This work will be in accordance with ALARACT 16.

#### 244-S DCRT (296-S-22 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

#### 244-TX DCRT (296-T 18 STACK)

##### Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust

stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac 227	2.04E-02	Am 241	1.17E+01	Am 243	3.58E-04
Ba 137 m	2.69E+03	C - 14	4.06E-01	Cd - 113 m	1.40E+00
Cm 242	1.19E-02	Cm - 243	6.91E-04	Cm - 244	1.26E-02
Co 60	6.18E-01	Cs 134	6.84E-03	Cs - 137	2.84E+03
Eu 152	1.18E-01	Eu - 154	9.29E+00	Eu 155	5.09E+00
H 3	1.53E+00	I 129	5.10E-03	Nb 93 m	4.18E-01
Ni 59	1.57E-01	Ni 63	1.46E+01	Np 237	9.67E-03
Pa 231	4.25E-02	Pu - 238	4.84E-01	Pu - 239	9.45E+00
Pu 240	1.57E+00	Pu 241	1.23E+01	Pu - 242	8.61E-05
Ra 226	3.73E-02	Ra 228	8.82E-03	Ru - 106	8.01E-06
Sb 125	6.95E-01	Se 79	1.22E-02	Sm - 151	3.74E+02
Sn 126	6.02E-02	Sr 90	5.31E+03	Tc 99	2.76E+00
Th 229	4.01E-03	Th 232	1.13E-03	U - 232	6.22E-03
U - 233	7.78E-02	U 234	3.07E-02	U - 235	1.28E-03
U 236	6.36E-04	U 238	2.87E-02	Y - 90	5.31E+03
Zr - 93	5.03E-01				

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 6) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 7) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 8) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 9) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 10) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 12) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 13) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 14) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 15) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 16) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 17) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 21) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 22) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
- 23) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-S DCRT.
- 24) The emissions shall be limited to  $3.19\text{E-}02$  mrem/yr unabated and  $3.19\text{E-}04$  mrem/yr abated.
- 25) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires. (WAC 246-247-060 (6)).
- 26) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. (WAC 246-247-040 (9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: ISOLATION AND CLOSURE OF EXHAUST STACKS 296-A-25, 296-B-28, 296-S-22 AND 296-T-18**

Emission Unit Name: 244-TX PRIMARY HEPA

Emission Unit ID 744

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA		Single Breather Filter

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075		Levels below 10,000 dpm/100cm <sup>2</sup> beta/gamma and 200 dpm/100cm <sup>2</sup> alpha will verify low emissions.	1 per year

**Sampling Requirements:** PCM will be a smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

05/25/2003 NOC DOE letter number 03-ED-044, received March 24, 2003. Conditions and Limitations, approval letter AIR 03-611, mailed on June 27, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **No activities, other than those explicitly described within this approval, shall be conducted without prior written approval. The approved activities are limited to:**  
the following DCRT and associated stacks: 244-A (296-A-25), 244-BX (296-B-28), 244-S (296-S-22), and 244-TX (296-T-18):



## 244-A DCRT (296-A-25 STACK)

### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank, in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape through the breather filter while collecting any airborne radioactive particulates.

A passive ventilation breather filter system shall be installed above-grade on an existing riser or the existing annulus inlet filter riser, in accordance with ALARACT 1 and 16 "TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components". The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter systems will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-A DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-A-25 exhaustor is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with American Society of Mechanical Engineers (ASME) B31.3 and tested in accordance with ASME AG-1.

### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-A DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system, in accordance with ALARACT Demonstrations 6 and 14. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

### 296-A-25 Stack Isolation:

The 296-A-25 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade, in accordance with ALARACT Demonstration 16.

#### 244-BX DCRT (296-B-28 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system shall be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with and dilutes any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT Demonstration 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-BX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-BX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT Demonstration 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-B-28 Stack Isolation:

The 296-B-28 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be

cut and capped above grade. This work will be in accordance with ALARACT 16.

#### 244-S DCRT (296-S-22 STACK)

##### Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

#### 244-TX DCRT (296-T-18 STACK)

##### Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

##### HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

##### Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

##### 296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust

stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

4) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.12E-02	Am - 241	2.37E+01	Am - 243	7.23E-04
Ba 137 m	5.43E+03	C - 14	8.19E-01	Cd - 113 m	2.83E+00
Cm 242	2.40E-02	Cm 243	1.39E-03	Cm - 244	2.56E-02
Co 60	1.25E+00	Cs 134	1.38E-02	Cs - 137	5.74E+03
Eu - 152	2.38E-01	Eu - 154	1.88E+01	Eu 155	1.03E+01
H 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni - 59	3.18E-01	Ni - 63	2.95E+01	Np - 237	1.95E-02
Pa 231	8.58E-02	Pu 238	4.50E+02	Pu - 239	3.16E+01
Pu 240	1.92E+01	Pu 241	6.28E+04	Pu - 242	1.74E-04
Ra 226	7.54E-02	Ra 228	1.78E-02	Ru - 106	1.62E-05
Sb 125	1.40E+00	Se 79	2.46E-02	Sm 151	7.55E+02
Sn 126	1.22E-01	Sr 90	1.07E+04	Tc 99	5.57E+00
Th 229	8.09E-03	Th 232	2.28E-03	U - 232	1.26E-02
U 233	1.57E-01	U - 234	6.19E-02	U - 235	2.59E-03
U - 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr 93	1.02E+00				

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
- 6) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 7) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 8) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 9) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).
- 10) The facility shall report to the department within 24 hours, any unexpected release of radioactivity, shutdown or other condition that, if allowed to persist, or lasts more than four hours, would result in the emission of radionuclides in excess of any standards or limitation in the license. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitation included in this approval (paragraph 5) (WAC 246-247-080(5)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).

- 12) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 13) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 14) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 15) These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 16) The facility shall notify the department seven days in advance of any planned pre-operational testing of the emission unit's control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
- 17) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 18) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 19) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 20) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 21) Prior to permanent shut down of an emission unit or completion of an activity, the permittee shall file a report of closure with the Department of Health. The report of closure shall include the date of the shutdown and indicate whether, despite cessation of operation, there is still a potential for radioactive air emissions and a need for any active or passive ventilation system with emission control and/or monitoring devices. An emission unit or activity will not be considered permanently shut down or completed until a report of closure is received and approved by Health.

Once an emission unit is permanently shut down or an activity is completed, thereby rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the shutdown or completion, to meet any monitoring, record keeping, and reporting requirements which are no longer applicable for that emission unit or activity.

All records, relating to the shut down emission unit or completion of an activity, generated while the emission unit or activity was in operation, shall be kept in accordance with (WAC 246-247-080(8)). (WAC 246-247-080(6))

- 22) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
- 23) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-TX DCRT.
- 24) The emissions shall be limited to  $3.19\text{E-}02$  mrem/yr unabated and  $3.19\text{E-}04$  mrem/yr abated.
- 25) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires. (WAC 246-247-060 (6)).
- 26) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. (WAC 246-247-040 (9)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR  
PROJECT TITLE: 241-C-200 SERIES TANKS RETRIEVAL

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Excavation Restriction		Abatement controls as required in the following Conditions and Limitations.
	Fixatives (paint, water, dust suppressants)		Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDI.	As listed in the following Conditions and Limitations

Sampling Requirements: Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

- 07/08/2003 NOC received March 31, 2003. Draft Conditions and Limitations, AIR 03-703, mailed on July 8, 2003. Acceptance of DRAFT Conditions and Limitations received via fax on July 8, 2003. Final approval, AIR 03-704, mailed on July 9, 2003. Formal submittal of all changes approved via AIR 03-704 received on September 12, 2003.
- 09/17/2003 NOC Revision form received on September 24, 2003. Conditions and Limitations, AIR 03-1014 mailed October 28, 2003. Licensee authorized to proceed based on new conditions and equipment requirements on October 10, 2003. Corrected copy, AIR 03-1023, mailed on October 31, 2003.
- 12/31/2003 NOC Revision form, revision 2, received on December 16, 2003. Conditions and Limitations, AIR 04-102 mailed January 8, 2004.
- 04/01/2004 NOC Revision form, revision 3, received on February 24, 2004. Conditions and Limitations, AIR 04-401 mailed April 5, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).



- 2) The total abated emission limit for this Notice of Construction is limited to 1.72E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.18E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The activities listed below are approved for the C-200 Series Waste Retrieval effort:

**Retrieval Activities (Stack):**

- i. Operation of the new portable exhauster and ventilation system.
- ii. Retrieve wastes from C-201, C-202, C-203, and C-204 using the AMS to vacuum wastes to the central vessel skid.
- iii. Pump waste from central vessel skid to the double shell tank system using OGT lines

**Diffuse and Fugitive:**

a. Proposed Actions for Tanks C-201 through C-204:

- i. Removal of weather covers and debris from jet pump pits and ventilation hatchways (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
- ii. Remove condenser pit filter assembly and replace tank breather filter with a Y-duct assembly (ALARACTs 1, 4, 12, 15, and 16)
- iii. Remove liquid level reefs and thermocouple trees, 1 each per tank (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
- iv. Remove sluice eductor pump from Tank C-204, if necessary (ALARACTs 1, 4, 6, 12, 13, 14, and 15)

b. Tank Equipment Installations:

- i. AMS with connected hydraulic power pack, one per tank (ALARACTs 1, 4, 6, 12, 13, and 14)
- ii. Ventilation inlet filter assembly, one per tank (ALARACTs 1, 4, 12, 13 and 16)
- iii. Ventilation exhaust ducting, one per tank (ALARACTs 1, 4, 12, and 16)
- iv. Closed circuit TV s, one per tank (ALARACT 1, 4, 12, 13, and 16)
- v. Master camera control system skid, and connects to in-tank cameras (ALARACT 6, 13, and 16)
- vi. Central vessel skid, connect to individual AMS units, connect to the double shell tank via OGT lines (using hand digging or Guzzler, latest approved revision) (ALARACT 1, 4, 5, 6, 13, and 14)
- vii. Pump skid with connected hydraulic power pack, and OGT lines (ALARACT 1, 4, 6, 12, 13, and 14)
- viii. Vacuum skid with connected hydraulic power pack (ALARACT 1, 4, 6, 12, 13, and 14)
- ix. Portable exhauster skid, connect via HVAC ducting to individual tank ventilation exhaust ducts (ALARACTs 1, 4, 6, 12, 13, and 14)
- x. Electrical cable and electric supply to hydraulic power packs, vessel skid, pump skid, vacuum skid, portable exhauster skid, inlet filter, in-tank cameras, and generator,

control instrumentation (ALARACT 5)

- xi. Air compressor and associated air supply lines to AMS, vessel skid, vacuum skid (ALARACT 5)
- xii. Instrumentation control room, water distribution sled, instrument electrical skid, diesel generator

- c. Remove tank equipment installed under this NOC for maintenance, repair, disposal, or re-use for future tank retrievals. (ALARACTs 1, 4, 6, 12, 13, 14, 15 and 16)

4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	4.84E-06	Am - 241	4.17E-01	Am - 243	4.67E-06
Ba - 137 m	1.41E+00	C - 14	3.80E-05	Cd - 113 m	1.36E-03
Cm - 242	3.03E-04	Cm - 243	1.45E-05	Cm - 244	6.39E-06
Co - 60	1.59E-05	Cs - 134	1.41E-08	Cs - 137	1.49E+00
Eu - 152	7.67E-03	Eu - 154	3.62E-03	Eu - 155	2.69E-01
H - 3	1.86E-05	I - 129	5.19E-07	Nb - 93 m	6.53E-04
Ni - 59	1.42E-02	Ni - 63	1.33E+00	Np - 237	8.11E-07
Pa - 231	1.64E-07	Pu - 238	1.29E-02	Pu - 239	5.76E-01
Pu - 240	9.49E-02	Pu - 241	7.03E-01	Pu - 242	4.85E-06
Ra - 226	1.23E-06	Ra - 228	3.37E-12	Ru - 106	2.58E-09
Sb - 125	2.67E-05	Se - 79	1.67E-05	Sm - 151	5.91E-01
Sn - 126	1.06E-04	Sr - 90	3.50E+01	Tc - 99	2.67E-04
Th - 229	1.26E-09	Th - 232	9.06E-15	U - 232	1.98E-10
U - 233	7.54E-12	U - 234	7.15E-06	U - 235	3.15E-07
U - 236	8.27E-08	U - 238	7.20E-06	Y - 90	7.83E+00
Zr - 93	7.35E-04				

- 5) The total diffuse and fugitive abated emission limit for this Notice of Construction is limited to 1.61E-02 mrem/year to the Maximally Exposed Individual, comprised of 6.76E-03 mrem/year offsite and 9.37E-03 mrem/year onsite. The total unabated diffuse and fugitive emission limit for this Notice of Construction is limited to 1.61E-02 mrem/yr to the Maximally Exposed Individual, comprised of 6.76E-03 mrem/year offsite and 9.37E-03 mrem/year onsite (WAC 246-247-040(5)).

- 6) ALARACTs 1, 4, 5, 6, 12, 13, 14, 15, and 16 shall be used as detailed in Condition 3 above [WAC 246-247-040(5)].

- 7) Soil excavation performed using the Guzzler shall conform to approval conditions and limitations of the latest approved revision to the Guzzler NOC [WAC 246-247-040(5)].

- 8) **This condition was obsoleted on 10/10/2003.** One liquid level reel per tank, one thermocouple assembly per tank, two sluice eductors per tank, and a sluice pump in 241-C-204, may be removed. If the total adherent waste volume basis used in the supporting calculations for equipment removal is not exceeded, other equipment removals may be performed as noted in Condition 3, Item c. [WAC 246-247-040(5)].

*Obsoleted via AIR 03-1014. Removal of sluice eductors no longer licensed; associated PTE applied to cover removal of condenser pit filters.*

- 9) Radiological monitoring of all soil excavation work shall be performed and documented to ensure releases remain within releases estimated in the NOC. Soil volume excavated shall be tracked and

documented and shall not exceed 8,500 cubic feet. Soil shall be monitored per ALARACT 5. Contamination levels for excavation shall remain on average equal to or less than  $1 \text{ E}+06$  dpm beta and 20 dpm alpha [WAC 246-247-040(5)].

- 10) Radiological monitoring of all pit openings and pit work shall be performed and documented to ensure that maximum pit surface/pit contents contamination levels remain on average below those assumed in NOC release estimates for these activities:

- (a) 241-C-200 Series Tanks:  $1 \text{ E}+06$  dpm Beta/Gamma, 1400 dpm alpha
- (b) Tank 241-AY-101:  $8.5 \text{ E}+05$  dpm Beta/Gamma, 20 dpm alpha

No more than 16 C-200 series pit openings shall occur, and no more than four AY-101 pit openings shall occur. These shall be tracked and documented. The total surface area of C-200 Series pits opened plus the surface area of pit contents shall not exceed that used in the NOC support calculations. The total surface area of double-shell tank pits opened plus the surface area of pit contents shall not exceed that used in the NOC support calculations [WAC 246-247-040(5)].

- 11) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department [WAC 246-247-040(5)].
- 12) **This condition was obsoleted on 10/10/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).  
*Obsoleted via AIR 03-1014 to meet with standard conditions and limitations.*
- 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 14) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 16) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 17) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 18) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 19) The department reserves the right to inspect and audit all construction activities, equipment,

operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).

- 20) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 21) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 22) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 23) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 24) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 25) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 26) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 27) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 28) The condenser pit filter shall be withdrawn into a fully enclosed plastic sleeving. Once removed, the sleeve enclosing the filter shall be pigtailed, sealed, and disposed of within a mixed waste disposal box. The filter shall not be exposed to the environment. The condenser pit filter removal activities shall use ALARACTS 1, 4, 6, 13, 14, and 15 as guidance for contamination levels and controls.
- 29) A work place air sampler shall be in operation during all condenser pit filter removal activities. The air sampler shall be placed in the downwind direction.
- 30) A health physics technician shall be present during all condenser pit filter removal activities. Any contamination levels or dose rate readings exceeding the radiation work permit limits shall be notified to WDOH.

- 31) Prior to moving the HIHTL the lines shall be flushed and checked by a health physics technician to ensure minimal contamination. The valve on the tank manifold box shall be closed and the end of the line shall be wrapped in plastic, then removed from the manifold. The HIHTL will then be hooked up to the next tank.
- 32) One liquid level reel per tank, one thermocouple assembly per tank, one condenser pit filter per tank, and a sluice pump in 241-C-204, may be removed. If the total adherent waste volume basis used in the supporting calculations for equipment removal is not exceeded, other equipment removals may be performed as noted in Condition 3, Item c. [WAC 246-247-040(5)].
- 33) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 34) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 35) The Annual Possession Quantity shall be tracked on a WDOH approved log.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 241-C-200 SERIES TANKS RETRIEVAL**

Emission Unit Name: 296-P-48

Emission Unit ID 749

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Demister	1	
	Heater	1	
	Prefilter	1	
	HEPA	2	Two in series.
	Fan	1	

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075	Appendix B, Method 114 (2), (3) and (4)	All radionuclides that contribute greater than 10 percent of the potential-to- emit TEDE to the MEL, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEL, and greater than 25 percent of the TEDE to the MEL after controls, and gross Alpha/gross Beta.	During exhauster operation. Collect samples biweekly at a minimum.

**Sampling Requirements:** Continuous with a record sample.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

- 07/08/2003 NOC received March 31, 2003. Draft Conditions and Limitations, AIR 03-703, mailed on July 8, 2003. Acceptance of DRAFT Conditions and Limitations received via fax on July 8, 2003. Final approval, AIR 03-704, mailed on July 9, 2003. Formal submittal of all changes approved via AIR 03-704 received on September 12, 2003.
- 09/17/2003 NOC Revision form received on September 24, 2003. Conditions and Limitations, AIR 03-1014 mailed October 28, 2003. Licensee authorized to proceed based on new conditions and equipment requirements on October 10, 2003. Corrected copy, AIR 03-1023, mailed on October 31, 2003.

### CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.72E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.18E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

The activities listed below are approved for the C-200 Series Waste Retrieval effort:

#### Retrieval Activities (Stack):

- i. Operation of the new portable exhaustor and ventilation system.
- ii. Retrieve wastes from C-201, C-202, C-203, and C-204 using the AMS to vacuum wastes to the central vessel skid.
- iii. Pump waste from central vessel skid to the double shell tank system using OGT lines

#### Diffuse and Fugitive:

##### a. Proposed Actions for Tanks C-201 through C-204:

- i. Removal of weather covers and debris from jet pump pits and ventilation hatchways (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
- ii. Remove condenser pit filter assembly and replace tank breather filter with a Y-duct assembly (ALARACTs 1, 4, 12, 15, and 16)
- iii. Remove liquid level reels and thermocouple trees, 1 each per tank (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
- iv. Remove sluice eductor pump from Tank C-204, if necessary (ALARACTs 1, 4, 6, 12, 13, 14, and 15)

##### b. Tank Equipment Installations:

- i. AMS with connected hydraulic power pack, one per tank (ALARACTs 1, 4, 6, 12, 13, and 14)
- ii. Ventilation inlet filter assembly, one per tank (ALARACTs 1, 4, 12, 13 and 16)
- iii. Ventilation exhaust ducting, one per tank (ALARACTs 1, 4, 12, and 16)
- iv. Closed circuit TV's, one per tank (ALARACT 1, 4, 12, 13, and 16)
- v. Master camera control system skid, and connects to in-tank cameras (ALARACT 6, 13, and 16)
- vi. Central vessel skid, connect to individual AMS units, connect to the double shell tank via OGT lines (using hand digging or Guzzler, latest approved revision) (ALARACT 1,

- 4, 5, 6, 13, and 14)
- vii. Pump skid with connected hydraulic power pack, and OGT lines (ALARACT 1, 4, 6, 12, 13, and 14)
- viii. Vacuum skid with connected hydraulic power pack (ALARACT 1, 4, 6, 12, 13, and 14)
- ix. Portable exhauster skid, connect via HVAC ducting to individual tank ventilation exhaust ducts (ALARACTs 1, 4, 6, 12, 13, and 14)
- x. Electrical cable and electric supply to hydraulic power packs, vessel skid, pump skid, vacuum skid, portable exhauster skid, inlet filter, in-tank cameras, and generator, control instrumentation (ALARACT 5)
- xi. Air compressor and associated air supply lines to AMS, vessel skid, vacuum skid (ALARACT 5)
- xii. Instrumentation control room, water distribution sled, instrument electrical skid, diesel generator

- c. Remove tank equipment installed under this NOC for maintenance, repair, disposal, or re-use for future tank retrievals. (ALARACTs 1, 4, 6, 12, 13, 14, 15 and 16)

4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	1.36E-03	Am - 241	4.07E+01	Am - 243	9.41E-04
Ba - 137 m	3.96E+02	C - 14	1.07E-02	Cd - 113 m	3.83E-01
Cm - 242	6.10E-02	Cm - 243	2.92E-03	Cm - 244	1.29E-03
Co - 60	4.48E-03	Cs - 134	3.97E-06	Cs - 137	4.19E+02
Eu - 152	2.16E+00	Eu - 154	1.02E+00	Eu - 155	7.55E+01
H - 3	5.21E-03	I - 129	1.46E-04	Nb - 93 m	1.84E-01
Ni - 59	4.00E+00	Ni - 63	3.73E+02	Np - 237	2.28E-04
Pa - 231	4.61E-05	Pu - 238	2.60E+00	Pu - 239	1.16E+02
Pu - 240	1.91E+01	Pu - 241	1.42E+02	Pu - 242	9.77E-04
Ra - 226	3.47E-04	Ra - 228	9.45E-10	Ru - 106	7.24E-07
Sb - 125	7.50E-03	Se - 79	4.68E-03	Sm - 151	1.66E+02
Sn - 126	2.99E-02	Sr - 90	2.20E+03	Tc - 99	7.51E-02
Th - 229	3.53E-07	Th - 232	2.54E-12	U - 232	4.38E-08
U - 233	1.87E-09	U - 234	2.00E-03	U - 235	8.90E-05
U - 236	1.95E-05	U - 238	2.02E-03	Y - 90	2.20E+03
Zr - 93	2.06E-01				

- 5) The total abated emission limit for 296-P-48 under this Notice of Construction is limited to 1.12E-03 to the Maximally Exposed Individual, comprised of 2.62E-04 mrem/year offsite and 8.53 E-04 mrem/year onsite. The total unabated emission limit on the potential-to-emit for 296-P-48 under this Notice of Construction is limited to 2.17 mrem/year to the Maximally Exposed Individual, comprised of 4.62E-01 offsite and 1.7E+00 mrem/year onsite to the Maximally Exposed Individual [WAC 246-247-040(5)].
- 6) The number of gallons of waste retrieved from each C-200 series tank shall be documented and reported to WDOH on completion [WAC 246-247-040(5)].
- 7) All activities performed under this NOC shall be performed in accord with ALARA principles [WAC 246-247-040(1)].
- 8) A cold test shall be performed on the new portable exhauster system. An acceptance test plan shall be



provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].

- 9) Once the new portable exhauster system is connected to the new farm ductwork, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].
- 10) The new portable exhauster shall provide two banks of HEPA filters in series, and the glycol heater shall be provided with an automatic heater trip function actuated by exhaust stream temperature indication. The trip set point shall be set below 200 F. HEPAs shall be individually aerosol tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].
- 11) The new portable exhauster shall operate continuously when the AMS are operating in the tanks. Waste retrieval activities shall cease if the exhauster is not operating [WAC 246-247-040(5)].
- 12) Licensee shall provide a written justification for use of a humidity probe in determining stack gas moisture content under 40 CFR 60 Appendix A, Method 2. Retrieval operations shall not proceed under this NOC until WDOH has approved the justification [WAC 246-247-040(5)].
- 13) **This condition was obsoleted on 1/8/2003.** The following shall be provided to WDOH for review one month prior to commencement of waste retrieval operations:
  - 1) Code compliance matrix for exhauster and new ventilation system;
  - 2) Acceptance test plan and operating test plan, and test results for exhauster;
  - 3) Exhauster design specifications;
  - 4) Copies of exhauster manufacturer's qualification test records;
  - 5) CAM alarm/interlocks and actions;
  - 6) Operating procedures or other documentation demonstrating administrative/other controls adequate to ensure conformance of exhauster/vent system and waste retrieval operations to the conditions and limitations of this NOC [WAC 246-247-040(5)].

*Obsoleted via AIR 04-1162 as item 5 in list changed to "Operation of the 296-P-48 exhauster will be conducted with radiation contamination controls, compliance, and alarm response specific to procedure T0-060-010, Operate POR03 Exhauster", per request for Revision 2 of NOC 579, dated 12/16/03 and approved 12/31/03. A new condition with the revised wording is added below (Condition 37). The CAM is not required per ANSI 13.1 1999. It appeared in the license condition due to representations of the licensee, later determined to be unnecessary.*
- 14) A written technical basis for the stack monitoring system, as required by ANSI 13.1-1999, Section 4, shall be provided to WDOH. Waste retrieval operations under this NOC shall not commence until WDOH has reviewed the stack monitoring technical basis [WAC 246-247-040(5)].
- 15) Vacuum exhaust drawn from the batch holding vessel shall be routed back to tanks. The tanks shall be maintained under a negative pressure during tank retrieval activities [WAC 246-247-040(5)].
- 16) The batch holding vessel and associated piping shall be contained in a Conex-type container. That container shall be equipped with a single passive HEPA filter and leak detection devices. The leak detection shall be maintained and monitored in the two manifold boxes while in use [WAC 246-247-040(5)].
- 17) A copy of the hose-in-hose transfer line management plan accepted by the Washington State Department of Ecology as meeting WAC-173-303 for hazardous waste lines shall be provided to WDOH, RPP-12711 [WAC 246-247-040(5)].
- 18) The 241-C-200 Series Waste Retrieval Concept HAZOP report shall be issued prior to beginning waste

retrieval operations under this NOC. A copy shall be provided to WDOH on issue [WAC 246-247-040(5)].

- 19) **This condition was obsoleted on 10/10/2003.** These Conditions and Limitations must be documented in an established procedure prior to starting activities granted by this approval (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

*Obsoleted via AIR 03-1014 to reflect current standard conditions and limitations.*

- 20) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 21) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 22) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 23) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 24) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 25) The facility must be able to demonstrate the reliability and accuracy of emissions data and other test results from this emission unit (WAC 246-247-075(13)).
- 26) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 27) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 28) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 29) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 30) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 31) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will

constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))

- 32) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 33) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 34) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 35) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 36) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 37) The following shall be provided to WDOH for review one month prior to commencement of waste retrieval operations:
  - 1) Code compliance matrix for exhauster and new ventilation system;
  - 2) Acceptance test plan and operating test plan, and test results for exhauster;
  - 3) Exhauster design specifications;
  - 4) Copies of exhauster manufacturer's qualification test records;
  - 5) Operation of the 296-P-48 exhauster will be conducted with radiation contamination controls, compliance, and alarm response specific to procedure T0-060-010 ,  
Operate POR03 Exhauster
  - 6) Operating procedures or other documentation demonstrating administrative/other controls adequate to ensure conformance of exhauster/vent system and waste retrieval operations to the conditions

and limitations of this NOC [WAC 246-247-040(5)].

- 38) At least once a shift a visual inspection of the ductwork, HEPA filter housing, fan, and flex connections shall be performed to verify the integrity of the ventilation system. Any deficiencies shall be reported to WDOH.
- 39) A daily radiological survey of all the ductwork flange connections shall be performed to verify there is no leakage of radiological contamination from the exhaust ductwork.
- 40) The differential pressure across the pre-filter, primary HEPA filter, secondary HEPA filter and total differential pressure across the pre-filter, primary HEPA filter and secondary HEPA filter shall be measured and recorded at least once each shift. The differential pressure readings shall be trended and any unexpected fluctuations in the differential pressure shall be reported to WDOH.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE TRANSURANIC WASTE RETRIEVAL PROJECT**

**Emission Unit Name: HEPA VACUUMS**

**Emission Unit ID 455**

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: **ALARACT**

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
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Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
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There are no sampling requirements.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/04/2003 DOE/RL-2001, Revision 2 of application removed the use of the Guzzler and added the use of two new emission units (Drum Venting System Active and Passive Vents). Obsolete license NOC ID 492. Revision 2A received October 28, 2003 and replaces Revision 2. Rewrite of Revision 2A received December 3, 2003. Approved via AIR 03-1206, mailed on December 9, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization,

bulging, or similar abnormal condition) may also be vented.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $5.40\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0                       $1.90\text{E-}03$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Alpha release rate based on Am-241. Release rate for contaminated soil removal using HEPA Vacuum. See condition 22.

B/G - 0                       $1.30\text{E-}02$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Beta/Gamma release rate based on Cs-137. Release rate for contaminated soil removal using HEPA Vacuum. See condition 22.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Am -243	Cf -252
Cm -244	Cs -134	Cs -137
Eu -152	Eu -154	Pu -238
Pu -239/240	Pu -241	Sr -90
U -234	U -235	U -236
U -238		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESIAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision

- for such testing (WAC 246-247-075(9) and (10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
  - 10) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
  - 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
  - 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
  - 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
  - 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
  - 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
  - 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
  - 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
  - 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for

- inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
  - 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
  - 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
  - 22) HVU potential unabated release rates of  $1.9 \text{ E-3 Ci/yr}$  alpha (based on americium-241) and  $1.3 \text{ E-2 Ci/yr}$  beta (based on cesium-137) is based on a release fraction of 1. This alternative release fraction is approved as being conservative for this emission unit.
  - 23) Use of HVUs for control of localized spot contamination will be done in accordance with the HVU NOC (DOE-RL-97-50, as amended).
  - 24) HVUs shall be tested at 99.95% removal efficiency and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. Records of this testing shall be maintained on file.
  - 25) It is recognized that other radionuclides may be present in very limited quantities.



DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE TRANSURANIC WASTE RETRIEVAL PROJECT**

**Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE**

**Emission Unit ID 486**

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
			Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

Sampling Requirements: Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/04/2003 DOE/RL-2001 Revision 2 of application removed the use of the Guzzler and added the use of two new emission units (Drum Venting System Active and Passive Vents). Obsolete license NOC ID 492. Revision 2A received October 28, 2003 and replaces Revision 2. Rewrite of Revision 2A received December 3, 2003. Approved via AIR 03-1206, mailed on December 9, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent

(as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	1.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241. Release rate for installation of Nuclif filters using the Dart System. See Condition 38.			
Alpha- 0	3.30E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (contamination detected). See condition 39.			
Alpha- 0	6.70E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (Higher contamination level, controls required). See condition 39.			
Alpha- 0	9.40E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (notification level). See condition 39.			
Alpha- 0	2.80E-05	Solid	WAC 246-247-030(21)(e)
Release rate based on Am-241. Release rate for staging/handling vented containers. See Condition 37.			
B/G - 0	2.10E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta/Gamma release rate based on Cs-137. Release rate for installation of Nuclif filters using the Dart System. See condition 38.			
B/G - 0	2.20E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (contamination detected). See condition 39.			
B/G - 0	4.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (Higher contamination level, controls required). See condition 39.			
B/G - 0	6.20E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (notification level). See condition 39.			
Beta - 0	4.10E-04	Solid	WAC 246-247-030(21)(e)
Release rate based on Cs-137. Release rate for staging/handling vented containers. See Condition 37.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Cf - 252
Cm - 244	Cs - 134	Cs - 137
Eu - 152	Eu - 154	Pu - 238
Pu - 239/240	Pu - 241	Sr - 90
U - 234	U - 235	U - 236
U - 238		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 6) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 7) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 8) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 9) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 10) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 11) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 12) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests

- and emergency procedures (WAC 246-247-075(12)).
- 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
  - 14) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
  - 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
  - 16) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
  - 17) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
  - 18) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
  - 19) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
  - 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
  - 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
  - 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a

request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).

- 23) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.

The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods (hand tools) shall be used to excavate contaminated soil. All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follow: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of

incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.

Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

- 24) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWP.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to

vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid without risk of contamination release to install a NucFit filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

- 25) Health physics technician (HPT) coverage will be provided during the excavation activities, continuously when in close proximity to containers.
- 26) Both alpha and beta/gamma surveys shall be performed for all removable contamination surveys and for soil surveys (direct reading). Alpha surveys alone shall be performed for direct readings of container surfaces. Beta/gamma direct readings are influenced by container contents, so are not as useful and are not required.
- 27) Dust controls such as water, fixatives, covers, or windcreens will be applied, as determined by the Radiological Control organization.
- 28) Spoil piles containing contaminated soil will be segregated from the clean soil and dust controls such as water, fixatives, or covers will be applied at the end of each shift or when sustained or predicted windspeeds are >20 mph. Containerizing spoils for disposal may be performed.
- 29) Manual methods will be used to excavate soil in close proximity to containers (after overburden is removed).
- 30) Operational limits for TRU retrieval (contamination levels) will be established in the activity work packages and associated RWP. Fixatives or other controls will be employed if contamination levels (other than spot contamination) exceed 100,000 disintegrations per minute per 100 square centimeters (dpm/100 cm<sup>2</sup>) beta/gamma or exceed 2,000 dpm/100 cm<sup>2</sup> alpha.
- 31) Excavation activities will be stopped if contamination (other than spot contamination) with detection readings greater than 500,000 dpm/100 cm<sup>2</sup> beta/gamma or greater than 28,000 dpm/100 cm<sup>2</sup> alpha is encountered.

Excavation will not continue at that site (but may proceed at other sites) until an internal review of the work and encountered conditions has been performed and an internal determination has been made that no threat to personnel safety or the environment exists, or until proper controls (i.e., removal and disposal, water, fixatives, or covers) have been put in place to mitigate any further potential for emissions; and the WDOH has been contacted and briefed of the situation.

- 32) WDOH will be notified per WAC 246-247-080(5) if a loss of containment occurs (dropping, spilling, puncturing a container, or otherwise encountering loss of integrity where contamination escapes containment), which exceeds 100,000 dpm/100 cm<sup>2</sup> beta/gamma or 2,000 dpm/100 cm<sup>2</sup> alpha removable contamination.

- 33) The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. These procedures will be provided to the department for review prior to operations under this license.
- 34) It is recognized that other radionuclides may be present in very limited quantities.
- 35) Additional monitoring for the diffuse and fugitive emissions will consist of radiological surveys from the soil excavation activities.
- 36) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the dart system (an example of a "failure" would be where the Dart is used in a thin or corroded spot where the dart punches a hole through the lid).
- 37) A maximum of 11,000 vented containers of waste (including 1,000 containers that are not designated as TRU waste, which could be retrieved with vents in place) are approved to be retrieved per year. Once vented, the containers are allowed to be staged with the other retrieved containers for further handling, resulting in the staging/storage of a maximum of 11,000 vented containers per year at the LLBG. Using an average release fraction of  $2.00 \text{ E-}09$  for fugitive emissions from vented containers (as used in the WRAP NOC, DOE/RI-2000-34), the potential unabated release rate from the staging of vented containers is  $2.8 \text{ E-}05 \text{ Ci/yr}$  americium-241 and  $4.1 \text{ E-}04 \text{ Ci/yr}$  cesium-137. This alternative release fraction is approved for this emission unit.
- 38) A maximum of 1,000 containers/yr are approved to have installation of NucFil filters using the Dart System. The potential unabated release rate from using the Dart System for installation of NucFil filters is  $1.4 \text{ E-}4 \text{ Ci/yr}$  americium-241 and  $2.1 \text{ E-}3 \text{ Ci/yr}$  cesium-137 and is based on a release fraction of  $1.0\text{E-}3$  and a pressure release time of 1 hour. All of the emissions from a pressurized container are routed through the HEPA-type NucFil filter (certified 99.97% removal efficiency); therefore, the abated release rate is  $4.8 \text{ E-}8 \text{ Ci/yr}$  americium-241 and  $7.1 \text{ E-}7 \text{ Ci/yr}$  cesium-137. This alternative release fraction is approved for this emission unit.
- 39) The potential unabated release rate from manual excavation is based on a release fraction of  $1.0\text{E-}3$ .
- 40) Deteriorated containers involving a loss of containment from handling/retrieval of such containers (dropping, spilling, puncturing or crushing a container, where containment is lost, or otherwise encountering loss of containment) have a probability of greater than 1% while excavating the V-Notch Trench. Planning for such incidents shall be addressed prior to performing retrieval work in the horizontal V-notched trench configuration. A new application shall be submitted to the department for approval prior doing any work on the horizontal V-notched trench configuration.
- 41) A final of 2003-RSP-TRU-01, Transuranic (TRU) Retrieval Project Survey Plan, will be provided to the department when the document is completed.
- 42) For bulk transfer of contaminated soils, a backhoe or front-end loader may only be used when the material is wetted during the transfer process.



DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE TRANSURANIC WASTE RETRIEVAL PROJECT**

**Emission Unit Name: DRUM VENTING SYSTEM (ACTIVE VENT)      Emission Unit ID    755**

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	HEPA Type Filter	1	Shall be a NucFil Model IHF-004 or other with prior approval by the department.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075		TOTAL ALPHA TOTAL BETA TOTAL GAMMA	End of each shift of operation

**Sampling Requirements:**    Smears of the exhaust vent at the end of each shift of operation.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/04/2003 DOE/RL-2001, Revision 2 of application removed the use of the Guzzler and added the use of two new emission units (Drum Venting System Active and Passive Vents). Obsolete license NOC ID 492. Revision 2A received October 28, 2003 and replaces Revision 2. Rewrite of Revision 2A received December 3, 2003. Approved via AIR 03-1206, mailed on December 9, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and

headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $5.40\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha-0                       $4.30\text{E-}04$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Alpha release rate based on Am-241. See condition 26.

B/G - 0                       $6.40\text{E-}03$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Beta/Gamma release rate based on Cs-137. See condition 26.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Am 243	Cf -252
Cm 244	Cs 134	Cs -137
Eu -152	Eu -154	Pu -238
Pu -239/240	Pu -241	Sr -90
U -234	U -235	U -236
U -238		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 6) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 7) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 8) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if

- allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 9) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
  - 10) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
  - 11) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
  - 12) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
  - 13) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
  - 14) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
  - 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
  - 16) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
  - 17) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
  - 18) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
  - 19) The facility shall file a report of closure with the department whenever operations producing emissions

- of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 23) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.

The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the

containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods shall be used to excavate contaminated soil. High-efficiency particulate air (HEPA) filtered vacuums are allowed for use for spot contamination in accordance with the HEPA-filtered vacuum unit (HVU) NOC (DOE/RL-97-50, as amended).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follows: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.

Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

- 24) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWPs.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System that ensures personnel and environmental protection. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid to install a NucFil filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

- 25) The system shall be built to meet NQA-1 requirements and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. If in-field aerosol testing is not feasible, an approved alternative is given to replace the filters on an annual basis with the manufacturer tested and certification of HEPA filter with a tested rating of 99.97% efficiency. Records of this testing shall be maintained on file.
- 26) A maximum of 9,000 containers of TRU waste are approved to be processed per year using the DVS. The processing rate is designed to be 3 to 6 drums per hour, or a maximum of 20 minutes per drum. Only one drum shall be process at a time per DVS unit (If a second DVS is acquired, it shall be registered and licensed by the department prior to use). Using the release fraction of  $1.0E-3$  for particulates and a time factor of  $1.9E-1$  (20 minutes per container multiplied by 9,000 containers and divided by 526,000 minutes per year) the potential unabated release rates using the DVS is  $4.3E-4$  Ci/yr americium 241 and  $3.2E-6$  Ci/yr cesium 137. This alternative release fraction is approved for this emission unit.
- 27) Final copies of the Scheduled Radiation Task Descriptions for this emission unit will be provided to the department when completed.

- 28) Final copies of the Mobile Drum Venting System (mDVS) Filter Test Performance QA Test Data for this emission unit will be provided to the department when completed.
- 29) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the drum venting system.
- 30) It is recognized that other radionuclides may be present in very limited quantities.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF THE TRANSURANIC WASTE RETRIEVAL PROJECT**

**Emission Unit Name: DRUM VENTING SYSTEM (PASSIVE VENT)      Emission Unit ID    756**

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: **BARCT**

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	HEPA Type Filter	1	Shall be a Pall Model Ultramet or other with prior approval by the department.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075		TOTAL ALPHA TOTAL BETA TOTAL GAMMA	End of each shift of operation.

**Sampling Requirements:**    Smears of the exhaust vent at the end of each shift of operation.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/04/2003 DOE/RL-2001, Revision 2 of application removed the use of the Guzzler and added the use of two new emission units (Drum Venting System Active and Passive Vents). Obsolete license NOC ID 492. Revision 2A received October 28, 2003 and replaces Revision 2. Rewrite of Revision 2A received December 3, 2003. Approved via AIR 03-1206, mailed on December 9, 2003.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install Nuclfil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and



headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is  $5.40\text{E-}02$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0                       $4.30\text{E-}07$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Alpha release rate based on Am-241. See condition 30.

B/G - 0                       $2.20\text{E-}05$                       Liquid/Particulate Solid                      WAC 246-247-030(21)(e)

Beta/Gamma release rate based on Cs-137. See condition 30.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Am -243	Cf -252
Cm -244	Cs -134	Cs -137
Eu -152	Eu -154	Pu -238
Pu -239/240	Pu -241	Sr -90
U -234	U -235	U -236
U -238		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 6) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 7) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).

- 8) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 9) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 10) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 11) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 12) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 13) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 14) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 15) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 16) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 17) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 18) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 19) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units)

regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))

- 20) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.

The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical

brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods shall be used to excavate contaminated soil. High-efficiency particulate air (HEPA) filtered vacuums are allowed for use for spot contamination in accordance with the HEPA-filtered vacuum unit (HVU) NOC (DOE/RL-97-50, as amended).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follow: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.

Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

- 23) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

#### Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWP's.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System that ensures personnel and environmental protection. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid to install a NucFil filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

- 24) The system shall be built to meet NQA-1 requirements and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. If in-field aerosol testing is not feasible, an approved alternative is given to replace the filters on an annual basis with the manufacturer tested and certification of HEPA filter with a tested rating of 99.97% efficiency. Records of this testing shall be maintained on file.
- 25) The top of the drum shall be surveyed while inside the DVS, after installation of the NucFil filter. If removable contamination is found, the drum lid shall be decontaminated before removal from the DVS. The drum shall be surveyed immediately after removal from the DVS. Once removed from the DVS, the drum must be immediately decontaminated or contained such that the drum is free of removable contamination (i.e., less than 20 dpm/ 100 cm<sup>2</sup> alpha and less than 1000 dpm/100 cm<sup>2</sup> beta/gamma). Decontamination at the LLBG is attempted in a graded approach (dry rags, wet rags, decontamination solutions, fixatives, or overpacking if other methods prove unsuccessful).
- 26) The test compartment is passively ventilated with a HEPA-type filter and is designed to withstand a deflagration as described in the performance specification for this venting system. If deflagration occurs, all activities associated with this license shall cease and the department shall be notified.
- 27) Final copies of the Scheduled Radiation Task Descriptions for this emission unit will be provided to the department when completed.

- 28) Final copies of the Mobile Drum Venting System (mDVS) Filter Test Performance QA Test Data for this emission unit will be provided to the department when completed.
- 29) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the drum venting system (An example of a "failure" is a pressure release that blows past the seal of the boot or a deflagration).
- 30) The passive vent of the DVS exhausts potential emissions from the use of the HEPA Vacuum mounted in the test chamber to collect metal filings after installation of a NucFil filter. Release rates are calculated by multiplying surface area vacuumed by the contamination level. An estimate of the release rate is calculated by assuming the surface area of the boot that covers the drum lid during the filter installation process (8.3 square inches) multiplied by 9,000 drums with an average contamination level of 10,000 dpm/100 cm<sup>2</sup> beta/gamma and 200 dpm/100 cm<sup>2</sup> alpha. Using a release fraction of 1.0 for the HEPA vacuum use, the potential release rates from using the DVS is 4.3E-7 Ci/yr americium-241 and 2.2E-05 Ci/yr cesium-137. This alternative release fraction is approved for this emission unit.
- 31) It is recognized that other radionuclides may be present in very limited quantities.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF RESEARCH ACTIVITIES CONDUCTED IN THE  
CHEMICAL SCIENCES LABORATORY (329 BUILDING)**

Emission Unit Name: EP-329-01-S

Emission Unit ID 366

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	HEPA	2	In series, (System includes up to 5 banks of 2 stages of HEPA filters in series, minimum of 1 bank of 2 testable filters in use)
	Fan	2	2 in parallel, 1 Standby (3 total)

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	TOTAL ALPHA TOTAL BETA	2 week sample/year
Sampling Requirements: Record Sample			

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

04/15/2004 NOC received September 19, 2003. This NOC is a modification to an existing emission unit, EP-329-01-S. This approval supercedes and obsoletes NOC 494. Conditions and Limitations, AIR 04-407, mailed on April 20, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 9.35E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Research activities conducted in the 329 Building support the Hanford environmental mission and other key DOE missions of national and international importance. Research activities are performed on both

radioactive and non-radioactive samples. The following processes are allowed to be performed in the 329 Building:

- Development of special purpose radiation detection and sampling/analysis systems.
- Development of electronics and software to enhance radiation detector performance.
- Radiation detection equipment used for radioisotope quantification that may involve chemical separations.
- Solid, liquid, and gas sample (both radioactive and non-radioactive) analysis in specialized laboratories.
- Wet chemistry techniques and the operation of specialized analytical instrumentation such as mass spectrometers, organic mass spectrometers, and inductively coupled plasma spectrometers.
- Separations and analyses of radionuclides and samples containing radionuclides.
- Preparation of radioactive standards (solid, liquid, and gas).
- Characterizing chemical, radiochemical, and physical properties of samples (e.g., tank wastes, spent fuel, contaminated soils and water), as well as other gaseous materials, glass, ceramic, carbonaceous, or metallic waste forms.
- Performing research using high-level and low-level mixed tank wastes and their simulants to test radiochemical process systems such as leaching, solvent extraction, ion exchange, vitrification, fuel dissolution, decontamination, evaporation, grouting, solid waste packaging/shipment, and high-level liquid waste shipping/receiving/transportation.
- Performing research and development for processing and immobilization support including waste separation, ion exchange, sludge washing/leaching, ultra filtration, oxidation/precipitation, species separation, immobilization, and characterization.
- Using a full suite of analytical capabilities for radiochemical and inorganic chemical analyses in support of process development, specializing in the analysis of highly radioactive materials and very complex sample matrices.
- Developing methods for the separation of radioisotopes.
- Glove box work and storage of higher activity materials in shielded storage areas.
- Developing and testing radioisotope generators.
- Conducting Non-Destructive Analysis (NDA).
- Processes involving the creation of mixed activation products (MAP) and mixed fission products (MFP), separation, analysis and research.
- Developing thermal and vitrification processes to immobilize hazardous and radioactive materials into acceptable waste forms. Waste processing technology development includes design, process development, remote operations, and numerical and computational modeling.
- Providing chemical and physical separations in support of radiological and hazardous material processing and disposal requirements. These technologies include: removal and concentration of hazardous and/or radioactive components for environmental remediation; separation of hazardous and/or radioactive materials, including solid/liquid phase separations; and, recovery of specific components for recycle and reuse.
- Separations and analyses of radionuclides for environmental measurements.  
Sampling and analysis of environmental samples including soils, vegetation and water/liquids; decommissioning materials; and tank wastes.
- Performing research with supercritical fluids to understand chemistry mechanisms and processes.
- Lab setup projects involving fume hood removals/upgrades and ductwork tie-in.



- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.34E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0                      5.60E-06                      Liquid/Particulate Solid                      WAC 246-247-030(21)(a)

Alpha release rate based on Am-241.

B/G - 0                      9.20E-03                      Liquid/Particulate Solid                      WAC 246-247-030(21)(a)

Beta/Gamma release rate based on Sr-90 and Cs-137.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac -225		Ac -227		Ac -228	
Ag -109	m	Ag -106		Ag -109	m
Ag -110	m	Ag -110		Ag -111	
Al -26		Am -241		Am -242	m
Am -242		Am -243		Am -245	
Ar -37		Ar -39		Ar -41	
Ar -42		As -74		As -76	
At -217		Au -195		Au -198	
Ba -131		Ba -133		Ba -133	m
Ba -137	m	Ba -139		Ba -140	
Ba -141		Ba -142		Be -10	
Be -7		Bi -207		Bi -210	
Bi -211		Bi -212		Bi -213	
Bi -214		Bk -249		Bk -250	
Br -82		Br -83		Br -84	
Br -85		C -11		C -14	
C -15		Ca -41		Ca -45	
Ca -47		Cd -109		Cd -113	m
Cd -113		Cd -115	m	Cd -115	
Ce -139		Ce -141		Ce -142	
Ce -143		Ce -144		Cf -249	
Cf -250		Cf -251		Cf -252	
Cl -36		Cm -241		Cm -242	
Cm -243		Cm -244		Cm -245	
Cm -246		Cm -247		Cm -248	
Co -56		Co -57		Co -58	
Co -60		Cr -51		Cs -131	
Cs -134		Cs -134	m	Cs -135	
Cs -136		Cs -137		Cs -138	
Cs -139		Cu -64		Es -254	
Eu -150		Eu -152		Eu -152	m
Eu -154		Eu -155		Eu -156	
Eu -157		F -18		Fe -55	
Fe -59		Fr -221		Fr -223	
Ga -67		Ga -72		Gd -148	

Gd -149	
Gd -153	
Hf -175	
Hf -181	
Ho -166	
I -123	
I -130	
I -133	
In -106	
In -114	
Ir -192	
Kr -81	
Kr -85	m
Kr -89	
La -140	
Lu -177	
Mn -56	
N -13	
Nb -91	
Nb -93	m
Nb -95	m
Nd -144	
Ni -59	
Np -235	
Np -238	
Np -240	m
P -33	
Pa -234	
Pb -210	
Pb -214	
Pm -145	
Pm -148	m
Pm -151	
Po -210	
Po -213	
Po -216	
Pr -144	
Pu -236	
Pu -239	
Pu -242	
Ra -223	
Ra -226	
Rb -87	
Rb -90	
Re -187	
Rh -103	m

Gd -151	
Ge -68	
Hf -178	
Hf -182	
Ho -166	m
I -125	
I -131	
I -134	
In -113	m
In -115	
K -40	
Kr -83	m
Kr -87	
Kr -90	
La -141	
Mn -52	
Mo -93	
Na -22	
Nb -91	m
Nb -94	
Nb -97	
Nd -147	
Ni -63	
Np -236	
Np -239	
O -15	
Pa -231	
Pa -234	m
Pb -211	
Pd -107	
Pm -146	
Pm -148	
Po -208	
Po -211	
Po -214	
Po -218	
Pr -144	m
Pu -237	
Pu -240	
Pu -243	
Ra -224	
Ra -228	
Rb -88	
Rb -90	m
Re -188	
Rh -105	

Gd -152	
H -3	
Hf -178	m
Hg -203	
I -122	
I -129	
I -132	
I -135	
In -114	m
In -115	m
K -42	
Kr -85	
Kr -88	
La -138	
La -142	
Mn -54	
Mo -99	
Na -24	
Nb -92	
Nb -95	
Nb -97	m
Ni -56	
Ni -65	
Np -237	
Np -240	
P -32	
Pa -233	
Pb -209	
Pb -212	
Pd -109	
Pm -147	
Pm -149	
Po -209	
Po -212	
Po -215	
Pr -143	
Pu -234	
Pu -238	
Pu -241	
Pu -244	
Ra -225	
Rb -86	
Rb -89	
Re -186	
Rh -102	
Rh -105	m

Rh - 106		Rn - 219		Rn - 220	
Rn - 222		Ru - 103		Ru - 105	
Ru - 106		Ru - 97		S - 35	
Sb - 124		Sb - 125		Sb - 126	
Sb - 126	m	Sb - 127		Sc - 46	
Sc - 47		Se - 75		Se - 79	
Sm - 145		Sm - 146		Sm - 147	
Sm - 151		Sm - 153		Sm - 157	
Sn - 113		Sn - 119	m	Sn - 121	m
Sn - 123		Sn - 125		Sn - 126	
Sr - 85		Sr - 89		Sr - 90	
Sr - 91		Sr - 92		Ta - 179	
Ta - 182		Ta - 183		Tb - 160	
Tc - 101		Tc - 95	m	Tc - 97	
Tc - 97	m	Tc - 98		Tc - 99	
Tc - 99	m	Te - 121	m	Te - 121	
Te - 123		Te - 123	m	Te - 125	m
Te - 127	m	Te - 127		Te - 129	m
Te - 129		Te - 131		Te - 131	m
Te - 132		Te - 133		Te - 133	m
Te - 134		Th - 227		Th - 228	
Th - 229		Th - 230		Th - 231	
Th - 232		Th - 233		Th - 234	
Ti - 44		Tl - 204		Tl - 207	
Tl - 208		Tl - 209		Tm - 170	
Tm - 171		U - 232		U - 233	
U - 234		U - 235		U - 236	
U - 237		U - 238		U - 239	
U - 240		V - 48		V - 49	
W - 181		W - 185		W - 187	
W - 188		Xe - 122		Xe - 123	
Xe - 125		Xe - 127		Xe - 131	m
Xe - 133		Xe - 133	m	Xe - 135	
Xe - 135	m	Xe - 137		Xe - 138	
Y - 88		Y - 90		Y - 90	m
Y - 91		Y - 91	m	Y - 92	
Y - 93		Yb - 164		Yb - 175	
Yb - 177		Zn - 65		Zn - 69	
Zn - 69	m	Zr - 88		Zr - 89	
Zr - 93		Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions. (WAC 246-247-075 (10))
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).

- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075 (9))

23) The emission unit monitoring system shall have the following activities performed:

- a. The USDOE shall make available to DOH for review copies of the procedures used to perform the functional/calibration checks and visual inspection activities; and
- b. A functional/calibration check of monitoring system instrumentation shall be performed annually.

Within two years of this approval, ATR 04-407, dated April 20, 2004:

- c. A visual check of nozzle position and orientation;
- d. A check to ensure the tightness of all fittings and connections;
- e. A visual check of the sample line, around the area of the sample filter, for corrosion and line losses. This requirement is limited to the sample filter area only.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: PLUTONIUM FINISHING PLANT DECONTAMINATION TRAILER**

**Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE**

**Emission Unit ID 486**

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Excavation Restriction		Abatement controls as required in the following Conditions and Limitations.
	Fixatives (paint, water, dust suppressants)		Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

10/28/2003 NOC (DOE/RL-2003-42, Revision 0) received October 27, 2003. Draft Conditions and Limitations, approval letter AIR 04-210, mailed on February 24, 2004. Acceptance of DOH approval Conditions and Limitations received via fax on March 23, 2004, letter number 04-AMCP-0206. Final approval AIR 04-309 mailed on March 25, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.50E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

This activity is approved to provide decontamination of personnel who have been contaminated with

radioactive material. Initial decontamination activities would take place at the location of discovery. If additional decontamination is warranted, personnel would be transferred to the decontamination trailer.

Decontamination activities allowed to be performed at the decontamination trailer include the removal and packaging of contaminated clothing and isolation/removal of skin contamination.

- Before transport of personnel to the decontamination trailer, appropriate measures shall be taken to contain potentially dispersible contamination. To the extent practicable, contaminated clothing would be removed and disposed. Any remaining contamination would be isolated by bagging, taping, or other appropriate means.

- Inside the trailer, any additional contaminated coverings (e.g., coveralls, modesty clothing) would be removed, as appropriate, and packaged (e.g., plastic bags) for disposition. Various means to reduce/remove skin contamination would be used as appropriate. For small areas of contamination, scrubbing with soap and water or chemical cleaner would be used. For gross contamination, shower(s) would be used, followed by scrubbing(s).

All potentially radiological contaminated liquid shall be collected and contained in a catch tank located beneath the decontamination trailer.

The general chemical and physical processes associated with decontamination activities in the decontamination trailer consist of the following:

- On the identification of the need for additional decontamination of personnel, affected individuals would be escorted to the decontamination trailer.

- As appropriate, contaminated clothing, coverings, and/or articles would be removed, packaged, and dispositioned in accordance with the applicable facility waste handling procedures.

- Personnel decontamination processes might include various methods or combinations of cleaning agents and/or chemicals. For example: soap and water; premoistened towelettes, shaving cream-type foam decontamination agents for facial areas; removal of hair; and abrasive soaps for toughened skin surfaces (e.g., hands and feet).

- Spent decontamination solutions would be transferred from the decontaminated liquid holding tanks and containerized (e.g., packaged in absorbents in drums or placed in drums and carboys) and transported to existing facilities on the Hanford Site for disposal.

- Periodic maintenance inspections of the decontamination trailer are allowed to be performed without containment or portable exhausters.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.50E-06 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha-0	1.40E-07	WAC 246-247-030(21)(a)
<u>Based on Pu-239. Isotopes of plutonium and americium may be present based on process knowledge of PFP operations.</u>		

The radioactive isotopes identified for this emission unit are (no quantities specified):



The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Am -242	m	Am -242
Am -243	Am -244		Am -245
Pu -234	Pu -236		Pu -237
Pu -238	Pu -239/240		Pu -241
Pu -242	Pu -243		Pu -244
Pu -246			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. WAC 246-247-110(9). DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions. (WAC 246-247-075 (10))
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC

- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 21) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve

compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).

- 23) All decontamination operations activities shall be conducted under the auspices of radiological control technicians.
- 24) The expected frequency of personnel contamination requiring the use of the decontamination trailer is estimated to be less than 10 times per year. DOH shall be notified if that number is exceeded in any calendar year.
- 25) Radiological surveys during personnel decontamination operations (e.g., smears and hand-held radiation monitoring measurements on the interior/exterior of the decontamination trailer) are also approved as periodic confirmatory measurement (PCM) for this activity. Survey data shall be maintained as part of the air emissions record and will be available for inspection upon request.
- 26) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075(9))

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: CATEGORICAL TANK FARM FACILITY WASTE RETRIEVAL AND  
CLOSURE: PHASE I - SITE PREPARATION AND SYSTEM INSTALLATION**

Emission Unit Name: GUZZLER

Emission Unit ID 476

This is a MINOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	Collection Tank and Plate Separator	1	
	Cyclone Separator	1	Baghouse with 72 bags each.
	Micro-strainer Device	1	
	HEPA	3	Three in-place tested HEPA filters in parallel.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
WAC 246-247-075[3]	Appendix D, Method 114(3)	All radionuclides which could contribute greater than 10% of the potential-to-emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25% of the TEDE to the MEI, after controls.	When the HEPA filters are replaced and annually screening the HEPA filtration system.

**Sampling Requirements:** Radiation surveys and to include but not limited to NDA testing of the HEPA filters and screening the HEPA filtration system using gamma spectroscopy.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

09/26/2003 NOC received September 26, 2003. Draft Conditions and Limitations, AIR 03-1218 mailed on December 30, 2003. Acceptance of Draft Conditions and Limitations received via fax on December 31, 2003. DOH approval letter, AIR 04-114, mailed on January 28, 2004.

03/10/2004 NOC revision received March 10, 2004. Conditions and Limitations approved via AIR 04-306, mailed on March 11, 2004.

## CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 3.32E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.32E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Site preparation for the retrieval of the waste from single-shell tanks. This covers the following activities as described below.

Installation of the following in-tank equipment

- Waste distribution devices
- Transfer pumps
- Enraf-Nonius Series 854 (ENRAF) stilling wells
- Video cameras
- Instrument manifolds
- Central fury device
- Drain lines back to tank
- AMS (Articulated Mast System)
- Sluicing nozzles
- Ventilation inlet filter assemblies
- Connection of hose-in-hose transfer lines (HIITL)
- New pit cover-plates
- Electrical poser and instrument cables and other utility tie-ins and/or upgrades
- New above ground pits
- Jumpers

Removal, Decontamination and Disposal of Existing Equipment

- Breather filters
- Sludge weights
- Liquid observation wells (LOW)
- Standard Hydrogen Monitoring System (SHMS) probe
- Thermocouple probes
- Sluicing nozzles
- Video cameras
- Liquid level reel
- Jumpers from pits
- Saltwell pumps
- Sluice pumps
- Corrosion probes
- Shield plugs

- Slurry distributors
- Air lift circulators
- Riser adapter cover plates
- Saltwell screens
- Dip tubes
- Protective foam coating on pits

Other similar equipment may be installed or removed provided all conditions and limitations outlined in this approval are met.

#### Pit Work

Pits will be accessed for installation of instrument manifolds, transfer pump installation, jumper removal, replacement of existing HHHTLs with new HHHTLs, connection of high efficiency particulate air (HEPA) filters, exhaust trunk for the portable exhausters, and removal of various jumpers.

#### Removal of In-Tank Equipment

Various in-tank equipment, such as those listed above, will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the forces of waste retrieval.

#### In-Tank Equipment Installation

Motor controlled spray devices and sluicers will be inserted into risers on some tanks near the outside perimeter of the tank and an automatic indexing spray device also will be installed on a centrally located riser. In-tank closed circuit television cameras will be installed into risers and connected to a master camera control system skid. This equipment will be in the riser for the duration of the project and will not contact the waste. Each spray assembly is equipped with a spray washer to provide a decontamination rinse during removal. The spray devices and cameras will be sleeved out of the risers at completion of the project.

An AMS will be installed through risers of some tanks for use during retrieval. The AMS may be removed and reused. Pumps and In Tank Vehicles (ITVs) will be waste contacting and may be abandoned in place following the conclusion of retrieval operations.

Ventilation inlet filter assemblies (breather filters) will be installed on those tanks whose breather filters have been removed to accommodate portable exhausters and other retrieval equipment.

Installation of new risers ranging in diameter from four inches to 42 inches. Riser will be installed by first removing soil down to the concrete tank dome surface using hand digging and/or using the guzzler. A steel caisson will be inserted into the hole for wall support. A small layer of grout will be added to the bottom of the hole to provide a level surface. A hole will be partially drilled into the concrete. After a cable is attached to the core, the drilling will be completed through the dome into the tank headspace. The new prefabricated riser will be lowered into the caisson until support brackets on the side are seated on the grout top.

#### Soil Excavation

Soil will be excavated inside and outside the farms for various reasons such as tie in of instrumentation and power systems for monitoring transfer progress. Intermittent trenches will be excavated for this purpose

The volume of soil removed during excavation activities are volumes of disturbed soil that will not leave the respective farms. Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (i.e. backhoe, front loader). The soil will be used to fill the trenches after the hose and the conduits are installed.

**4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	3.84E-03	Beta 0	4.55E-01
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- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).

- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 21) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 23) The Annual Possession Quantity shall be tracked on a WDOH approved log.



- 24) The operation of the Guzzler shall meet all conditions and limitations of the latest Site Wide Guzzler NOC approval, with the exception of the annual emission limits which shall be tracked as part of this project. The total abated and unabated emission limit for the guzzler usage for this project shall not exceed 0.1 mrem/year.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: CATEGORICAL TANK FARM FACILITY WASTE RETRIEVAL AND  
CLOSURE: PHASE 1 - SITE PREPARATION AND SYSTEM INSTALLATION**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

Zone or Area	Abatement Technology	Required # of Units	Additional Description/Conditions
	Excavation Restriction		Abatement controls as required in the following Conditions and Limitations.
	Fixatives (paint, water, dust suppressants)		Abatement controls as required in the following Conditions and Limitations.

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

09/26/2003 NOC received September 26, 2003. Draft Conditions and Limitations. AIR 03-1218 mailed on December 30, 2003.  
Acceptance of Draft Conditions and Limitations received via fax on December 31, 2003. DOH approval letter, AIR 04-154, mailed on January 28, 2004.

03/10/2004 NOC revision received March 10, 2004. Conditions and Limitations approved via AIR 04-306, mailed on March 11, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 3.32E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.32E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Site preparation for the retrieval of the waste from single-shell tanks. This covers the following activities as described below.

**Installation of the following in-tank equipment**

- Waste distribution devices
- Transfer pumps
- Enraf-Nonius Series 854 (ENRAF) stilling wells
- Video cameras
- Instrument manifolds
- Central fury device
- Drain lines back to tank
- AMS (Articulated Mast System)
- Sluicing nozzles
- Ventilation inlet filter assemblies
- Connection of hose-in-hose transfer lines (HIHHL)
- New pit cover-plates
- Electrical posers and instrument cables and other utility tie-ins and/or upgrades
- New above ground pits
- Jumpers

**Removal, Decontamination and Disposal of Existing Equipment**

- Breather filters
- Sludge weights
- Liquid observation wells (LOW)
- Standard Hydrogen Monitoring System (SHMS) probe
- Thermocouple probes
- Sluicing nozzles
- Video cameras
- Liquid level reel
- Jumpers from pits
- Saltwell pumps
- Sluice pumps
- Corrosion probes
- Shield plugs
- Slurry distributors
- Air lift circulators
- Riser adapter cover plates
- Saltwell screens
- Dip tubes
- Protective foam coating on pits

Other similar equipment may be installed or removed provided all conditions and limitations outlined in this approval are met.

## Pit Work

Pits will be accessed for installation of instrument manifolds, transfer pump installation, jumper removal, replacement of existing HHFTLs with new HHFTLs, connection of high efficiency particulate air (HEPA) filters, exhaust trunk for the portable exhausters, and removal of various jumpers.

## Removal of In-Tank Equipment

Various in-tank equipment, such as those listed above, will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the forces of waste retrieval.

## In-Tank Equipment Installation

Motor controlled spray devices and sluicers will be inserted into risers on some tanks near the outside perimeter of the tank and an automatic indexing spray device also will be installed on a centrally located riser. In-tank closed circuit television cameras will be installed into risers and connected to a master camera control system skid. This equipment will be in the riser for the duration of the project and will not contact the waste. Each spray assembly is equipped with a spray washer to provide a decontamination rinse during removal. The spray devices and cameras will be sleeved out of the risers at completion of the project.

An AMS will be installed through risers of some tanks for use during retrieval. The AMS may be removed and reused. Pumps and In Tank Vehicles (ITVs) will be waste contacting and may be abandoned in place following the conclusion of retrieval operations.

Ventilation inlet filter assemblies (breather filters) will be installed on those tanks whose breather filters have been removed to accommodate portable exhausters and other retrieval equipment.

Installation of new risers ranging in diameter from four inches to 42 inches. Riser will be installed by first removing soil down to the concrete tank dome surface using hand digging and/or using the guzzler. A steel caisson will be inserted into the hole for wall support. A small layer of grout will be added to the bottom of the hole to provide a level surface. A hole will be partially drilled into the concrete. After a cable is attached to the core, the drilling will be completed through the dome into the tank headspace. The new prefabricated riser will be lowered into the caisson until support brackets on the side are seated on the grout top.

## Soil Excavation

Soil will be excavated inside and outside the farms for various reasons such as tie in of instrumentation and power systems for monitoring transfer progress. Intermittent trenches will be excavated for this purpose.

The volume of soil removed during excavation activities are volumes of disturbed soil that will not leave the respective farms. Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (i.e. backhoe, front loader). The soil will be used to fill the trenches after the hose and the conduits are installed.

4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Ac - 227	2.15E-02	Am - 241	7.21E+00	Ar - 243	2.13E-04
Ba - 137	m 3.69E+02	C - 14	1.55E-02	Cd - 113	m 1.03E+00
Cm - 242	6.12E-03	Cm - 243	4.11E-04	Cm - 244	1.15E-02
Co - 60	9.80E-01	Cs - 134	5.25E-02	Cs - 137	3.90E+02
Eu - 152	8.00E-02	Eu - 154	8.19E+00	Eu - 155	5.80E+00
H - 3	5.63E-02	I - 129	3.40E-04	Nb - 93	m 2.76E-01
Ni - 59	7.68E-02	Ni - 63	7.31E+00	Np - 237	8.68E-04
Pa - 231	4.72E-02	Pu - 238	3.62E-01	Pu - 239	7.53E+00
Pu - 240	1.15E+00	Pu - 241	6.14E+00	Pu - 242	3.28E-05
Ra - 226	7.62E-01	Ra - 228	4.47E-03	Ru - 106	2.59E-05
Sb - 125	1.40E+00	Se - 79	3.70E-03	Sm - 151	2.57E+02
Sn - 126	4.55E-02	Sr - 90	1.62E+04	Tc - 99	6.85E-01
Th - 229	7.52E-02	Th - 232	1.10E-03	U - 232	3.81E-03
U - 233	8.16E-02	U - 234	1.17E-02	U - 235	5.01E-04
U - 236	2.03E-04	U - 238	1.20E-02	Y - 90	1.62E+04
Zr - 93	3.34E-01				

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department retains the right to conduct stack sampling, environmental monitoring or other testing around this unit to assure compliance. If directed by the department, the facility must make provision for such testing (WAC 246-247-075(9) and (10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).

- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 21) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their

radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).

- 23) A review of the Ambient Air Monitoring Program shall be conducted to ensure the current network provides adequate coverage of all diffuse emission from activities conducted under this approval. The results of this review shall be sent to WDOH.
- 24) The Annual Possession Quantity for pit entries, equipment removal activities, soil excavation, and Guzzler operation shall be tracked on a WDOH approved log.
- 25) Riser installation activities shall cease when sustained winds exceed 25 miles per hour. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed reading taken from it must be documented in the ICS Work Records.
- 26) During penetration of the tank dome, core drilling activities will take place within plastic sleeving. When the cylinder core is removed it shall remain contained within the plastic sleeving, and plastic sleeving shall remain over the existing hole in the tank dome until the new riser is installed.
- 27) Soil excavation activities shall be performed in accordance with the requirements of TWRS ALARACT Demonstration 5 "Demonstration for soil excavation (using hand tools)".
- 28) Work involved with pits and in-tank equipment installation and removal shall follow the requirements of TWRS ALARACT Demonstrations 1, 3, 4, 6, 7, 10, 11, 12, 13, 14, 15, and 16.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: CONSTRUCTION AND OPERATION OF A FUEL STORAGE FACILITY AT  
THE PLUTONIUM FINISHING PLANT COMPLEX**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area	Abatement Technology	Required # of Units	Additional Description/Conditions
<u>Additional</u> abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.			

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

05/18/2004 NOC received April 26, 2004. DRAFT Conditions and Limitations, AIR 04-602, mailed June 7, 2004. Fixed acceptance received June 9, 2004. Final Conditions and Limitations, AIR 04-605, mailed on June 14, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 5.50E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Concrete containers shall be installed as an array of fourteen containers. Existing fuel packages shall be transferred to an area immediately adjacent to the concrete container prepared to receive the fuel. After loading the fuel (via crane), each concrete container shall be closed and managed as a point source. The concrete containers shall be either closed with a seal or vented passively through a NucFil or equivalent filter.



Fuel assemblies/pins repackaging and storage activities shall be conducted outdoors. All work shall be performed in accordance with approved radiological control methods and as low as reasonably achievable (ALARA) program requirements. These requirements shall be carried out through activity work packages and associated radiological work permits.

Presently, at the PFP Complex, there are closed interim storage casks (ISCs) that each contain a core component container (CCC). A CCC contains fuel received from the Fast Flux Test Facility (located in the 400 Area of the Hanford Site). Five (5) of the CCCs have residual surface contamination associated with them due to handling at FFTF.

The lids of each ISC shall be removed and the CCCs transferred via crane to a new concrete container. After loading the CCC (via crane), each concrete container would be closed and managed as a point source. The emptied ISCs shall be closed and returned to FFTF.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $5.50\text{E-}05$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
<u>Based on Am-241. Isotopes of plutonium and americium may be present based on process knowledge of PFP operations.</u>			
Beta - 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
<u>Based on Sr-90.</u>			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Co -60	Cs -137
Sr -90		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEF, or greater than 25% of the TEDE to the MEF after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with

- applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions (WAC 246-247-075(10)).
  - 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
  - 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
  - 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
  - 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
  - 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
  - 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
  - 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
  - 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
  - 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
  - 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
  - 19) The facility shall make available, in timely manner, all documents requested by the department for

- review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department.
- 21) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 22) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 23) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075(9))
- 24) Contaminated clothing, coverings, and/or materials shall be packaged and dispositioned in accordance with applicable facility waste handling procedures.

DEPARTMENT OF HEALTH  
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**PROJECT TITLE: CONSTRUCTION AND OPERATION OF A FUEL STORAGE FACILITY AT  
THE PLUTONIUM FINISHING PLANT COMPLEX**

Emission Unit Name: CONCRETE CONTAINERS

Emission Unit ID 874

This is a MINOR, PASSIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
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Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	WAC 246-247-040(3) & (5)	TOTAL ALPHA TOTAL BETA	Annually at a minimum

Sampling Requirements: Radiological surveys to include smears of vents and seal areaAdditional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

05/18/2004 NOC received April 26, 2004. DRAFT Conditions and Limitations, AIR 04-602, mailed June 7, 2004. Fixed acceptance received June 9, 2004. Final Conditions and Limitations, AIR 04-605, mailed on June 14, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 5.50E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) **This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.**

Concrete containers shall be installed as an array of fourteen containers. Existing fuel packages shall be transferred to an area immediately adjacent to the concrete container prepared to receive the fuel. After loading the fuel (via crane), each concrete container shall be closed and managed as a point source. The concrete containers shall be either closed with a seal or vented passively through a NucFil or equivalent filter.

Fuel assemblies/pins repackaging and storage activities shall be conducted outdoors. All work shall be performed in accordance with approved radiological control methods and as low as reasonably achievable (ALARA) program requirements. These requirements shall be carried out through activity work packages and associated radiological work permits.

Presently, at the PFP Complex, there are closed interim storage casks (ISCs) that each contain a core component container (CCC). A CCC contains fuel received from the Fast Flux Test Facility (located in the 400 Area of the Hanford Site). Five (5) of the CCCs have residual surface contamination associated with them due to handling at FFTF.

The lids of each ISC shall be removed and the CCCs transferred via crane to a new concrete container. After loading the CCC (via crane), each concrete container would be closed and managed as a point source. The emptied ISCs shall be closed and returned to FFTF.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-c) [as specified in the application] is  $5.50\text{E-}05$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Based on Am-241. Isotopes of plutonium and americium may be present based on process knowledge of PFP operations.			
Beta - 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Based on Sr-90			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am -241	Co -60	Cs -137
Sr - 90		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEL, or greater than 25% of the TEDE to the MEL after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).

- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions (WAC 246-247-075(10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 11) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 12) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 13) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 14) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 15) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075(9))
- 16) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 17) Periodic maintenance inspections of the closed concrete storage containers shall be performed at least annually.
- 18) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H (WAC 246-247-080(2)).
- 19) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 20) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if

- allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 21) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 22) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 23) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).

DEPARTMENT OF HEALTH  
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APPROVAL FOR

**PROJECT TITLE: 232-Z CONTAMINATED WASTE RECOVERY PROCESS FACILITY AT THE  
PLUTONIUM FINISHING PLANT**

Emission Unit Name: 296-Z-14

Emission Unit ID 391

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]  
BARCT [WAC 246-247-040(3)]

<u>Zone or Area:</u>	<u>Abatement Technology</u>	<u>Required # of Units</u>	<u>Additional Description/Conditions</u>
	HEPA	2	3 parallel paths of 2 HEPAs in series, minimum of 1 path in operation
	Fan	1	2 fans, 1 fan is backup

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

<u>Federal and State Regulatory</u>	<u>Monitoring and Testing Procedure</u>	<u>Radionuclides Requiring Measurement</u>	<u>Sampling Frequency</u>
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Appendix B, Method 114, 61.93(b)(2)(ii) Alternative monitoring and flow testing approval granted per request DOE-RL Letter 04-AMCP- 0297, dated May 28, 2004.	All radionuclides that contribute greater than 10 percent of the potential-to- emit TEDE to the MEL, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEL, and greater than 25 percent of the TEDE to the MEL after controls	Continuous

Sampling Requirements: Continuous

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

- 06/14/2004 NOC revision, DOE/RL-2002-64 revision 2, received June 7, 2004 to correct earlier revisions regarding potential inventory which could contribute to the calculated potential-to-emit. Obsolete and revises NOC 553. Approved via AIR 04-804 dated August 4, 2004 for NOC ID 601.
- 07/08/2004 Alternative approval granted per request of DOE-RL Letter 04-AMCP-0297, dated May 28, 2004 for (1) alternative stack flow measurement procedure to use the maximum design flow rate of 4,000 CFM; and (2) continued use of the existing sample extraction equipment as installed in the system operating at part-time subisokinetic by transmittal of AIR 04-804 dated August 4, 2004 for NOC ID 601.
- 08/12/2004 New license issued to clarify language in process description. New license issued via AIR 04-809 dated August 17, 2004, and replaces AIR 04-804 dated August 4, 2004.



## CONDITIONS AND LIMITATIONS

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to  $1.80\text{E-}02$  mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed transition activities include the following:

- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

The methods for removing residual contamination from equipment/systems and for removing equipment include direct contact and remote technologies/techniques. These include: laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; and potentially a remote-operated laser. More specifically, the activities include the following:

- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
- Decontamination methods include: Scrapping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent spread of contamination.
- Miscellaneous mechanical processes allowed to support the proposed activity include threading of piping, use of hot taps on piping, capping and plugging piping using threaded

pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installations of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and filters.

The inactive section of the 232-Z Building duct located in the 291-Z Building shall be blanked off. Underground ductwork between the 232-Z Building and the 291-Z Building shall be characterized (e.g., remotely using a pipe crawler) for residual contamination and structural integrity; appropriate mitigation actions shall be applied pending final disposition (i.e., decontamination, in-situ stabilization).

Minor amounts of excavation are allowed to take place in the vicinity of the 232-Z Building to support site stabilization and isolating/blanking utilities. Access to underground piping and cable may be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes are also approved. Up to approximately 84 cubic meters of soil are allowed to be disturbed. Contaminated soil removed during excavation activities shall be covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or 'clean' soil).

If used during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit are allowed.

Wastes generated during deactivation would be packaged appropriately and transported in closed containers which meet established waste acceptance criteria to approved onsite locations/facilities pending final disposition.

Prior to the stack emissions sampling system being de-energized under this license, a plan for monitoring fugitive emissions will be prepared identifying specific monitoring requirements based on final characterization and end state of the structure. The plan will be submitted to WDOH for review before and approval prior to the shut down of the 296-Z-14 Stack.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E+03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	9.80E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 238	1.90E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 239	2.00E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 240	6.40E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 241	7.50E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(b)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Np - 237	Pu - 238
Pu - 239	Pu - 240	Pu - 241

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5))
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions. (WAC 246-247-075(10))
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart II. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license

requirements (WAC 246-247-080(5)).

- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075(9))

- 23) All emissions of radionuclides, including those due to emergency conditions resulting from startup, shutdown, maintenance activities, or process upsets are subject to the standards of this section and, therefore, subject to the enforcement actions of WAC 246-247-100. (WAC 246-247-040(6))
- 24) System airflow shall be monitored using process instrumentation to detect system transients that would cause system flow rate to exceed HEPA filter design capacity. Additional HEPA filter flow path (3 total) shall be provided if system flow exceeds the design flow capacity of two filter paths.
- 25) Abated emissions from the 296-Z-14 stack are limited to  $1.2\text{E-}3$  mrem/year.

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: 232-Z CONTAMINATED WASTE RECOVERY PROCESS FACILITY AT THE  
PLUTONIUM FINISHING PLANT**

Emission Unit Name: 200 AREA DIFFUSE/FUGITIVE

Emission Unit ID 486

This is a MAJOR, FUGITIVE, non-point source emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
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Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	All radionuclides which could contribute 10% of the potential TEDE.	As listed in the following Conditions and Limitations.

**Sampling Requirements:** Existing near-facility monitoring stations.

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

- 06/14/2004 NOC revision, DOE/RL-2002-64 revision 2, received June 7, 2004 to correct earlier revisions regarding potential inventory which could contribute to the calculated potential-to-emit. Obsoletes and revises NOC 553. Approved via AIR 04-804 dated August 4, 2004 for NOC ID 601.
- 07/08/2004 Alternative approval granted per request of DOE-RL Letter 04-AMCP-0297, dated May 28, 2004 for (1) alternative stack flow measurement procedure to use the maximum design flow rate of 4,000 CFM; and (2) continued use of the existing sample extraction equipment as installed in the system operating at part-time subisokinetic by transmittal of AIR 04-804 dated August 4, 2004 for NOC ID 601.
- 06/12/2004 New license issued to clarify language in process description. New license issued via AIR 04-809 dated August 17, 2004, and replaces AIR 04-804 dated August 4, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
- 2) The total abated emission limit for this Notice of Construction is limited to 1.80E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5))
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-

030(16), may be conducted.

The proposed transition activities include the following:

- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

The methods for removing residual contamination from equipment/systems and for removing equipment include direct contact and remote technologies/techniques. These include: laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; and potentially a remote-operated laser. More specifically, the activities include the following.

- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
- Decontamination methods include: Scrapping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physically removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent spread of contamination.
- Miscellaneous mechanical processes allowed to support the proposed activity include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installations of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and filters.

The inactive section of the 232-Z Building duct located in the 291-Z Building shall be blanked off. Underground ductwork between the 232-Z Building and the 291-Z Building shall be characterized (e.g., remotely using a pipe crawler) for residual contamination and structural integrity; appropriate mitigation actions shall be applied pending final disposition (i.e., decontamination, in-situ stabilization).

Minor amounts of excavation are allowed to take place in the vicinity of the 232-Z Building to support site stabilization and isolating/blanking utilities. Access to underground piping and cable may be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes are also approved. Up to approximately 84 cubic meters of soil are allowed to be disturbed. Contaminated soil removed during excavation activities shall be covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or 'clean' soil).

If used during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhausters, or HEPA filtered vacuum radioactive air emission unit are allowed.

Wastes generated during deactivation would be packaged appropriately and transported in closed containers which meet established waste acceptance criteria to approved onsite locations/facilities pending final disposition.

Prior to the stack emissions sampling system being de-energized under this license, a plan for monitoring fugitive emissions will be prepared identifying specific monitoring requirements based on final characterization and end state of the structure. The plan will be submitted to WDOH for review before and approval prior to the shut down of the 296-Z-14 Stack.

- 4) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is  $4.80\text{E}+03$  mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha- 0	1.50E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
<u>Release based Pu 239/240.</u>			

The radioactive isotopes identified for this emission unit are (no quantities specified):

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).



- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions. (WAC 246-247-075 (10))
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. (WAC 246-247-080(6))
- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).

- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. (WAC 246-247-075 (9))
- 23) Diffuse/Fugitive emissions shall be monitored using the 200 Area near-field ambient air monitors. Sample collection and analysis shall follow that of the near field monitoring program. Analytical results shall be reported in the Annual Air Emissions Report. Any change to this near-field ambient monitoring program must be approved by the department
- 24) The total unabated or abated TEDE as the results of diffuse/fugitive emissions for this activity shall not exceed  $1.8E-02$  mrem per year.
- 25) Radiological surveys (dose measurements and smear samples) taken during deactivation activities shall be performed to demonstrate the conservative nature of the estimated source term. These surveys are part of the existing radiological control program (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 26) Prior to the stack emissions sampling system being de-energized under this license, a plan for monitoring fugitive emissions will be prepared identifying specific monitoring requirements based on final characterization and end state of the structure. The plan will be submitted to WDOH for review before and approval prior to the shut down of the 296-Z-14 Stack (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 27) All emissions of radionuclides, including those due to emergency conditions resulting from startup, shutdown, maintenance activities, or process upsets are subject to the standards of this section and, therefore, subject to the enforcement actions of WAC 246-247-100. (WAC 246-247-040(6))

- 28) The emission controls used during the deactivation activities are administrative, based on ALARA principles and consist of ALARA techniques. Use of these controls satisfy as low as reasonably achievable control technology (ALARACT) for deactivation of the 232-Z Building. The transition operations shall be performed in accordance with the controls specified in a radiation work permit (RWP) and/or operating procedures. These shall be made available for WDOH inspection upon request.

These controls consist of the following:

- Health physics technician (HPT) coverage shall be provided, as necessary, during all deactivation and excavation activities.
  - The existing ventilation system for the 232-Z Building, exhausting through the 296-Z-14 Stack, shall be operational during transition activities.
  - The existing monitoring system for the 296-Z-14 Stack shall be operational during transition activities.
  - Appropriate controls such as water, fixatives, covers, containment tents, or windscreens shall be applied, if needed, as determined by the Radiological Control Organization. Soil removed during excavation activities shall be covered until replaced into the excavation or otherwise dispositioned.
  - After leveling, the soil surface radiological contamination levels shall be verified to be acceptable per Radiological Control Organization guidelines. If contamination is present above identified levels, the soil shall be removed and containerized for disposal or covered or fixed to provide containment of the contamination, consistent with radiological work procedures in effect at the time.
  - As appropriate, before starting deactivation activities (such as isolating utilities and piping or dismantling the exhaust system) removable contamination in the affected area(s) shall be reduced to ALARA. Measures such as decontamination solutions, expandable foam, fixatives, or glovebags also may be used to help reduce the spread of contamination.
  - If a guzzler, PTRAEU, or HEPA filtered vacuum radioactive air emission unit is used, controls as described in the sitewide guzzler NOC, DOE/RL-96-75 or DOE/RL-97-50, as amended, shall be followed.
  - If field surveys during excavation identify localized areas of contamination greater than the gross levels (500 dpm/100 cm<sup>2</sup> alpha), additional surveys shall be conducted on the perimeter of the identified area to verify the localized nature, ensuring that the overall assumed contamination level was not exceeded.
  - Appropriate controls approved by WDOH and identified in a monitoring plan supporting de-energization of the 296-Z-14 Stack shall be in place when the ventilation system is shut down (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 29) If a sitewide guzzler, PTRAEU, or HEPA filtered vacuum radioactive air emission unit is used, PCM for emissions from those units shall be performed as required by the guzzler NOC, DOE/RL-96-75 and DOE/RL-97-50, as amended, respectively (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF ROTARY MODE CORE SAMPLING SYSTEMS THREE  
AND FOUR.**

Emission Unit Name: 296-P-33

Emission Unit ID 144

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Heater	1	
	Prefilter	1	
	HEPA	2	
	Fan	1	1 flow path with 2 HEPA's each

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.

**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

**Sampling Requirements:** Continuous

Additional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.

**Change History**

08/18/2004 Original approval AIR 97-901, dated September 3, 1997.

08/18/2004 AIR 98-301, approved March 6, 1998.

08/18/2004 AIR 04-811 approved August 23, 2004 replaces all previous approvals. Paperwork for NOC 607 is located in the file for NOC 236.

09/16/2004 AIR 04-811 voided and replaced with AIR 04-904 due to database typo's and radionuclide changes. Mailed on September 17, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).

- 2) The total abated emission limit for this Notice of Construction is limited to 4.65E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.94E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

## CHEMICAL AND PHYSICAL PROCESSES UPSTREAM OF THE EMISSIONS UNIT

Releases resulting from RMCS activities will be primarily in particulate form. This is a result of the rotating action of the drill bit, which will increase particulate loading in the tank vapor space. Only a small percentage of the waste will be disturbed. Therefore, little, if any, nonparticulate radionuclides will enter vapor space from the waste. During RMCS operations, the vapor space above the waste in the tank contains radionuclides with the potential to be exhausted. To prevent fugitive radionuclide emissions, an exhauster will be operational during RMCS.

## OPERATING MODE

The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push-mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to drill through the waste. It is during the rotary mode operation that an exhauster system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meters per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler change out.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is take and could be operated continuously during the sampling operation.

Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During system connection and disconnection, as-low-as reasonably-achievable (ALARA) Principles will be followed.

### 4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Am 241	7.66E-04	Am 243	4.66E-07	C-14	5.12E-04
Cm-244	2.09E-06	Cs-137	1.25E+00	I-129	1.59E-06
Ni-63	7.24E-03	Np-237	2.34E-06	Pu-238	3.75E-05

Pu-239	7.17E-04	Pu-240	1.71E-04	Pu-241	1.54E-03
Sn-126	1.18E-05	Sr-90	9.32E-01	Tc-99	1.02E-03
U-235	1.00E-06	U-238	2.54E-05		

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions (WAC 246-247-075(10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060.

(WAC 246-247-080(6)).

- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040 (WAC 246-247-075(9)).
- 23) The exhauster must be continuously operated whenever the RMCS is in use and while the samples are being collected.
- 24) The exhauster monitoring system must meet ANSI N 13.1.
- 25) Operation logs must be kept on the use of the RMCS. An example of the log must be provided to the department prior to the first use of the RMCS.

- 26) The HEPA filters must be tested prior to being used for the first time under this NOC, after each movement of the RMCS, after each filter replacement, and at least once per year regardless of use to ensure the integrity of the filters.
- 27) All requirements, conditions, and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
- 28) **This condition was obsoleted on 8/18/2004.** The activities described in this approval are only approved for a period of ten years from the date of the original approval (March 6, 1998).



DEPARTMENT OF HEALTH  
RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION  
APPROVAL FOR

**PROJECT TITLE: OPERATION OF ROTARY MODE CORE SAMPLING SYSTEMS THREE  
AND FOUR.**

Emission Unit Name: 296-P-34

Emission Unit ID 253

This is a MAJOR, ACTIVELY ventilated emission unit.

**This emission unit requires the following Abatement Technology:**

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Abatement Technology	Required # of Units	Additional Description/Conditions
	Heater	1	
	Prefilter	1	
	HEPA	2	
	Fan	1	1 flow path with 2 HEPA's

Additional abatement technologies required by this Notice of Construction will be listed in the Conditions and Limitations section.**This emission unit has the following Monitoring and Sampling Requirements:**

Applicable Requirements: Monitoring, Testing and Quality Assurance WAC 246-247-075

Federal and State Regulatory	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

**Sampling Requirements:** ContinuousAdditional monitoring or sampling requirements established by this NOC will be listed in the Conditions and Limitations section.**Change History**

08/18/2004 Original approval AIR 97-901, dated September 3, 1997.

08/18/2004 AIR 98-301, approved March 6, 1998.

08/18/2004 AIR 04-811 approved August 23, 2004 replaces all previous approvals. Paperwork for NOC 607 is located in the file for NOC 236.

09/16/2004 AIR 04-811 voided and replaced with AIR 04-904 due to database typo's and radionuclide changes. Mailed on September 17, 2004.

**CONDITIONS AND LIMITATIONS**

- 1) The U.S. Department of Energy shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).

- 2) The total abated emission limit for this Notice of Construction is limited to 4.65E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.94E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 3) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

## CHEMICAL AND PHYSICAL PROCESSES UPSTREAM OF THE EMISSIONS UNIT

Releases resulting from RMCS activities will be primarily in particulate form. This is a result of the rotating action of the drill bit, which will increase particulate loading in the tank vapor space. Only a small percentage of the waste will be disturbed. Therefore, little, if any, nonparticulate radionuclides will enter vapor space from the waste. During RMCS operations, the vapor space above the waste in the tank contains radionuclides with the potential to be exhausted. To prevent fugitive radionuclide emissions, an exhauster will be operational during RMCS.

## OPERATING MODE

The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push-mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to drill through the waste. It is during the rotary mode operation that an exhauster system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meters per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler change out.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is take and could be operated continuously during the sampling operation.

Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During system connection and disconnection, as-low-as reasonably-achievable (ALARA) Principles will be followed.

### 4) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

Am 241	7.66E-04	Am 243	4.66E-07	C-14	5.12E-04
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Ni-63	7.24E-03	Np-237	2.34E-06	Pu-238	3.75E-05

Pu-239	7.17E-04	Pu-240	1.71E-04	Pu-241	1.54E-03
Sn-126	1.18E-05	Sr-90	9.32E-01	Tc-99	1.02E-03
U-235	1.00E-06	U-238	2.54E-05		

- 5) If this emission unit is not in compliance with the standards in WAC 246-247-040 during construction or operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-040(5)) and (WAC 246-247-060(5)).
- 6) The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emissions unit(s) (WAC 246-247-060(4)).
- 7) The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards (WAC 246-247-075(6)).
- 8) The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions (WAC 246-247-075(10)).
- 9) The facility must be able to demonstrate that workers associated with this emission unit are trained in the use and maintenance of control and monitoring systems, and in the performance of associated tests and emergency procedures (WAC 246-247-075(12)).
- 10) All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data (WAC 246-247-075(13)).
- 11) The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data and other records related to compliance with the requirements of this chapter (WAC 246-247-080(1)).
- 12) The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
- 13) The facility must meet all reporting and record keeping requirements of 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
- 14) The facility shall report all measured or calculated emissions annually (WAC 246-247-080(3)).
- 15) The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements (WAC 246-247-080(5)).
- 16) The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060

(WAC 246-247-080(6)).

- 17) The facility shall maintain readily (promptly) retrievable storage areas (on site) for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years (WAC 246-247-080(8)).
- 18) The facility shall ensure all emissions units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restriction or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. At a minimum for unannounced inspections, such requirements or restrictions must be told to inspectors to provide an opportunity for inspectors to meet those requirements prior to the inspection (WAC 246-247-080(9)).
- 19) The facility shall make available, in timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know (WAC 246-247-080(10)).
- 20) All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the Air Operating Permit. For radioactive material licensees, the requirements and limitations for the operation of emission units shall be incorporated into their radioactive materials license, and shall expire when the radioactive materials license expires (WAC 246-247-060(6)).
- 21) All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the Air Operating Permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license (WAC 246-247-060(9)).
- 22) The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040 (WAC 246-247-075(9)).
- 23) The exhauster must be continuously operated whenever the RMCS is in use and while the samples are being collected.
- 24) The exhauster monitoring system must meet ANSI N 13.1.
- 25) Operation logs must be kept on the use of the RMCS. An example of the log must be provided to the department prior to the first use of the RMCS.

- 26) The HEPA filters must be tested prior to being used for the first time under this NOC, after each movement of the RMCS, after each filter replacement, and at least once per year regardless of use to ensure the integrity of the filters.
- 27) All requirements, conditions, and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
- 28) **This condition was obsoleted on 8/18/2004.** The activities described in this approval are only approved for a period of ten years from the date of the original approval (March 6, 1998).